

## 9. REFERENCES

- Abadin HG, Hibbs BF, Pohl HR. 1997. Breast-feeding exposures of infants to cadmium, lead, and mercury: A public health viewpoint. *Toxicol Ind Health* 13(4):495-517.
- Abdel-Saheb I, Schwab AP, Banks MK, et al. 1994. Chemical characterization of heavy metal contaminated soil in southeast Kansas. *Water Air Soil Pollut* 78:73-82.
- Abraham KS, Abdel-Gawad NB, Mahmoud AM, et al. 2011. Genotoxic effect of occupational exposure to cadmium. *Toxicol Ind Health* 27(2):173-179.
- ACGIH. 2007. Cadmium. Threshold limit values for chemical substances and physical agents and biological exposure indices. Cincinnati, OH: American Conference of Governmental Industrial Hygienists, 17.
- Adams RG, Harrison JF, Scott P. 1969. The development of cadmium-induced proteinuria, impaired renal function, and osteomalacia in alkaline battery workers. *Q J Med* 152:425-443.
- Adamsson E, Piscator M, Nogawa K. 1979. Pulmonary and gastrointestinal exposure to cadmium oxide dust in a battery factory. *Environ Health Perspect* 28:219-222.
- Ades AE, Kazantzis G. 1988. Lung cancer in a non-ferrous smelter: The role of cadmium. *Br J Ind Med* 45:435-442.
- Adinolfi M. 1985. The development of the human blood-CSF-brain barrier. *Dev Med Child Neurol* 27:532-537.
- Adlercreutz H. 1995. Phytoestrogens: Epidemiology and a possible role in cancer protection. *Environ Health Perspect Suppl* 103(7):103-112.
- Agarwal, S; Zaman, T; Tuzcu, EM; et al. 2011. Heavy metals and cardiovascular disease: Results from the National Health and Nutrition Examination Survey (NHANES) 1999-2006. *Angiology* 62(5):422-429.
- Agency for Toxic Substances and Disease Registry. 1989. Decision guide for identifying substance-specific data needs related to toxicological profiles. Atlanta, GA: Agency for Toxic Substances and Disease Registry, Division of Toxicology.
- Agency for Toxic Substances and Disease Registry. 1990a. Biomarkers of organ damage or dysfunction for the renal, hepatobiliary, and immune systems. Subcommittee on Biomarkers of Organ Damage and Dysfunction. Atlanta, GA: Agency for Toxic Substances and Disease Registry.
- Agency for Toxic Substances and Disease Registry. 1990b. Case studies in environmental medicine: Cadmium toxicity. Atlanta, GA: Agency for Toxic Substances and Disease Registry.

---

\* Not cited in text

## 9. REFERENCES

- Akahori F, Masaoka T, Arai S. 1994. A nine-year chronic toxicity study of cadmium in monkeys. II. Effects of dietary cadmium on circulatory function plasma cholesterol and triglyceride. *Vet Hum Toxicol* 36(4):290-294.
- Åkesson A, Berglund M, Schutz A, et al. 2002. Cadmium exposure in pregnancy and lactation in relation to iron status. *Am J Public Health* 92(2):284-287.
- Åkesson A, Julin B, Wolk A. 2008. Long-term dietary cadmium intake and postmenopausal endometrial cancer incidence: A population-based prospective cohort study. *Cancer Res* 68(15):6435-6441.
- Åkesson A, Lundh T, Vahter M, et al. 2005. Tubular and glomerular kidney effects in Swedish women with low environmental cadmium exposure. *Environ Health Perspect* 113(11):1627-1631.
- Akinloye O, Arowojolu AO, Shittu OB, et al. 2006. Cadmium toxicity: A possible cause of male infertility in Nigeria. *Reprod Biol* 6(1):17-30.
- Alessio L, Apostoli P, Forni A, et al. 1993. Biological monitoring of cadmium exposure: An Italian experience. *Scand J Work Environ Health* 19:27-33.
- Alessio L, Berlin A, Dell'Orto A, et al. 1985. Reliability of urinary creatinine as a parameter used to adjust values of urinary biological indicators. *Int Arch Occup Environ Health* 55:99-106.
- Alfvén T, Elinder CG, Carlsson MD, et al. 2000. Low-level cadmium exposure and osteoporosis. *J Bone Miner Res* 15(8):1579-1586.
- Alfvén T, Elinder CG, Hellstrom L, et al. 2004. Cadmium exposure and distal forearm fractures. *J Bone Miner Res* 19(6):900-905.
- Alfvén T, Jarup L, Elinder C. 2002a. Cadmium and lead in blood in relation to low bone mineral density and tubular proteinuria. (Erratum in: *Environ Health Perspect* 110(9):A505). *Environ Health Perspect* 110(7):699-702.
- Ali MM, Murthy RC, Chandra SV. 1986. Developmental and long term neurobehavioral toxicity of low level *in utero* cadmium exposure in rats. *Neurobehav Toxicol Teratol* 8:463-468.
- Alloway BJ, Steinnes E. 1999. Anthropogenic additions of cadmium to soils. In: *Cadmium in soils and plants*. Kluwer Academic Publishers, 97-123.
- Alloway BJ, Jackson AP, Morgan H. 1990. The accumulation of cadmium by vegetables grown on soils contaminated from a variety of sources. *Sci Total Environ* 91:223-236.
- Altman PK, Dittmer DS. 1974. *Biological handbooks: Biology data book*. Vol. III. 2<sup>nd</sup> ed. Bethesda, MD: Federation of American Societies for Experimental Biology, 1987-2008, 2041.
- Amacher DE, Paillet SC. 1980. Induction of trifluorothymidine-resistant mutants by metal ions in L5178Y/TK<sup>+</sup> cells. *Mutat Res* 78:279-288.
- Andersen ME, Krishnan K. 1994. Relating *in vitro* to *in vivo* exposures with physiologically based tissue dosimetry and tissue response models. In: Salem H, ed. *Animal test alternatives: Refinement, reduction, replacement*. New York, NY: Marcel Dekker, Inc., 9-25.

## 9. REFERENCES

- Andersen ME, Clewell HJ, Gargas ML, et al. 1987a. Physiologically based pharmacokinetics and the risk assessment process for methylene chloride. *Toxicol Appl Pharmacol* 87:185-205.
- \*Andersen ME, MacNaughton MG, Clewell HJ, et al. 1987b. Adjusting exposure limits for long and short exposure periods using a physiological pharmacokinetic model. *Am Ind Hyg Assoc J* 48(4):335-343.
- \*Andersen O, Nielsen JB, Jones MM. 1989. Effects of dithiocarbamates on intestinal absorption and organ distribution of cadmium chloride in mice. *Pharmacol Toxicol* 64:239-243.
- Andersen O, Nielsen JB, Svendsen P. 1988. Oral cadmium chloride intoxication in mice: Effects of dose on tissue damage, intestinal absorption and relative organ distribution. *Toxicology* 48:225-236.
- Ando M, Hiratsuka N, Nakagawa J, et al. 1998. Cadmium accumulation in rats treated orally with cadmium chloride for 8 months. *J Toxicol Sci* 23(3):243-248.
- \*Ando M, Matsui S, Jinno H, et al. 1988. Generation of hypophosphatemia in rats by continuous oral administration of cadmium. *Toxicology* 53:1-10.
- Angelo RT, Cringan MS, Chamberlain DL, et al. 2007. Residual effects of lead and zinc mining on freshwater mussels in the Spring River Basin (Kansas, Missouri, and Oklahoma, USA). *Sci Total Environ* 384:467-496.
- Anonymous. 1994. Heavy metals in sewage sludge. *Food Chem Toxicol* 32(6):583-588.
- Antonio MT, Peinado V, Gonzalez JC, et al. 2010. Effects of maternal cadmium administration on development of monoaminergic, GABAergic and glutamatergic systems. *Environ Toxicol Pharmacol* 29(1):87-90.
- AOAC. 1984. In: Williams S, ed. *Official methods of analysis of the Association of Official Analytical Chemists*. 14th ed. Arlington, VA: Association of Official Analytical Chemists, Inc., 444-453.
- Aoshima K, Fan J, Cai Y, et al. 2003. Assessment of bone metabolism in cadmium-induced renal tubular dysfunction by measurements of biochemical markers. *Toxicol Lett* 136(3):183-192.
- APHA. 1977a. Tentative method of analysis for cadmium content of atmospheric particulate matter. Method 304. In: Katz M, ed. *Methods of air sampling and analysis*. 2nd ed. Washington, DC: American Public Health Association, 444-446.
- APHA. 1977b. Tentative method of analysis for cadmium content of atmospheric particulate matter by atomic absorption spectroscopy. Method 311. In: Katz M, ed. *Methods of air sampling and analysis*. 2nd ed. Washington, DC: American Public Health Association, 466-471.
- Apinan R, Satarug S, Ruengweerayut R, et al. 2010. The influence of iron stores on cadmium body burden in a Thai population. *Environ Geochem Health* 32(3):237-242.
- Arisawa K, Nakano A, Honda S, et al. 1997. Reproducibility of urinary  $\beta$ -microglobulin and cadmium excretion among residents in a cadmium-polluted area during a 3-year period. *Toxicol Lett* 91:147-152.
- Arisawa K, Nakano A, Saito H, et al. 2001. Mortality and cancer incidence among a population previously exposed to environmental cadmium. *Int Arch Occup Environ Health* 74:255-262.

## 9. REFERENCES

- \*Arisawa K, Uemura H, Hiyoshi M, et al. 2007a. Cadmium-induced renal dysfunction and mortality in two cohorts: Disappearance of the association in a generation born later. *Toxicol Lett* 169(3):214-221.
- Arisawa K, Uemura H, Hiyoshi M, et al. 2007b. Cause-specific mortality and cancer incidence rates in relation to urinary  $\beta$ 2-microglobulin: 23-Year follow-up study in a cadmium-polluted area. *Toxicol Lett* 173(3):168-174.
- Armstrong BG, Kazantzis G. 1983. The mortality of cadmium workers. *Lancet* 1(8339):1425-1427.
- Arnason JG, Fletcher BA. 2003. A 40+ year record of Cd, Hg, Pb, and U deposition in sediments of Patroon Reservoir, Albany County, NY, USA. *Environ Pollut* 123:383-391.
- Arora M, Weuve J, Schwartz J, et al. 2008. Association of environmental cadmium exposure with pediatric dental caries. *Environ Health Perspect* 116(6):821-825.
- Arora M, Weuve J, Schwartz J, et al. 2009. Association of environmental cadmium exposure with periodontal disease in U.S. adults. *Environ Health Perspect* 117(5):739-744.
- \*Arvidson B. 1980. Regional differences in severity of cadmium-induced lesions in the peripheral nervous system in mice. *Acta Neuropathol (Berl)* 49:213-223.
- ASTER. 1994. ASTER (Assessment Tools for the Evaluation of Risk) ecotoxicity profile. Duluth, MN: Environmental Research Laboratory, U.S. Environmental Protection Agency.
- ASTER. 1995. ASTER (Assessment Tools for the Evaluation of Risk) ecotoxicity profile. Duluth, MN: U.S. Environmental Protection Agency, Environmental Research Laboratory.
- Aurelio L-M, Pilar DL, Fulgencio GG, et al. 1993. Levels of cadmium, lead and zinc protoporphyrin absorption in different risk groups. *Ann Occup Hyg* 37(6):655-663.
- Autier V, White D. 2004. Examination of cadmium sorption characteristics for a boreal soil near Fairbanks, Alaska. *J Hazard Mater* 106B:149-155.
- Axelsson B, Piscator M. 1966. Renal damage after prolonged exposure to cadmium. An experimental study. *Arch Environ Health* 12:360-373.
- Baer KN, Benson WH. 1987. Influence of chemical and environmental stressors on acute cadmium toxicity. *J Toxicol Environ Health* 22:35-44.
- Baker TD, Hafner WG. 1961. Cadmium poisoning from a refrigerator shelf used as an improvised barbecue grill. *Public Health Rep* 76:543-544.
- Bako G, Smith ES, Hanson J, et al. 1982. The geographical distribution of high cadmium concentrations in the environment and prostate cancer in Alberta. *Can J Public Health* 73:92-94.
- \*Balaraman R, Gulati OD, Bhatt JD, et al. 1989. Cadmium-induced hypertension in rats. *Pharmacology* 38:226-234.
- Bandara JM, Wijewardena HV, Liyanage J, et al. 2010. Chronic renal failure in Sri Lanka caused by elevated dietary cadmium: Trojan horse of the green revolution. *Toxicol Lett* 198(1):33-39.

## 9. REFERENCES

- Baranowska I. 1995. Lead and cadmium in human placentas and maternal and neonatal blood (in a heavily polluted area) measured by graphite furnace atomic absorption spectrometry. *Occup Environ Med* 52(4):229-32.
- Baranski B. 1984. Behavioral alterations in offspring of female rats repeatedly exposed to cadmium oxide by inhalation. *Toxicol Lett* 22:53-61.
- Baranski B. 1985. Effect of exposure of pregnant rats to cadmium on prenatal and postnatal development of the young. *J Hyg Epidemiol Microbiol Immunol* 29:253-262.
- Baranski B. 1987. Effect of cadmium on prenatal development and on tissue cadmium, copper and zinc concentrations in rats. *Environ Res* 42:54-62.
- Baranski B, Sitarek K. 1987. Effect of oral and inhalation exposure to cadmium on the oestrous cycle in rats. *Toxicol Lett* 36:267-273.
- Baranski B, Stetkiewicz I, Sitarek K, et al. 1983. Effects of oral, subchronic cadmium administration on fertility, prenatal and postnatal progeny development in rats. *Arch Toxicol* 54:297-302.
- Bargagli R. 1993. Cadmium in marine organisms from the Tyrrhenian Sea: No evidence of pollution or biomagnification. *Oebalia* 19:13-25.
- Barnes DG, Dourson M. 1988. Reference dose (RfD): Description and use in health risk assessments. *Regul Toxicol Pharmacol* 8:471-486.
- Barnhart S, Rosenstock L. 1984. Cadmium chemical pneumonitis. *Chest* 86:789-791.
- Barrett HM, Irwin DA, Semmons E. 1947. Studies on the toxicity of inhaled cadmium. I. The acute toxicity of cadmium oxide by inhalation. *J Ind Hyg Toxicol* 29:279-285.
- Basinger MA, Jones MM, Holscher MA, et al. 1988. Antagonists for acute oral cadmium chloride intoxication. *J Toxicol Environ Health* 23:77-89.
- Bassendowska-Karska E, Zawadzka-Kos M. 1987. Cadmium sulfate does not induce sister chromatid exchanges in human lymphocytes *in vitro*. *Toxicol Lett* 37:173-175.
- Bauchinger M, Schmid E, Einbrodt HJ, et al. 1976. Chromosome aberrations in lymphocytes after occupational exposure to lead and cadmium. *Mutat Res* 49:57-62.
- Beevers DG, Cruickshank JK, Yeoman WB, et al. 1980. Blood-lead and cadmium in human hypertension. *J Environ Pathol Toxicol* 4:251-260.
- Benoff S, Hauser R, Marmar JL, et al. 2009. Cadmium concentrations in blood and seminal plasma: Correlations with sperm number and motility in three male populations (infertility patients, artificial insemination donors, and unselected volunteers). *Mol Med* 15(7-8):248-262.
- Berger GS, ed. 1994. Epidemiology of endometriosis. In: *Endometriosis: Advanced management and surgical techniques*. New York, NY: Springer-Verlag, 3-7.

## 9. REFERENCES

- \*Berlin M, Fredricsson B, Linge G. 1961. Bone marrow changes in cadmium poisoning in rabbits. *Arch Environ Health* 3:58-66.
- Bermond A, Bourgeois S. 1992. Influence of soluble organic matter on cadmium mobility in model compounds and in soils. *Analyst* 117(3):685-687.
- Bernard AM, Lauwerys R. 1981. Retinol binding protein in urine: A more practical index than urinary  $\beta_2$ -microglobulin for the routine screening of renal tubular function. *Clin Chem* 27:1781-1782.
- Bernard AM, Lauwerys R. 1986. Effects of cadmium exposure in humans. In: Foulkes EC, ed. *Handbook of experimental pharmacology*. Vol. 80. Berlin: Springer Verlag, 135-177.
- Bernard AM, Lauwerys R. 1989. Cadmium, NAG activity, and  $\beta_2$ -microglobulin in the urine of cadmium pigment workers. *Br J Ind Med* 46:679-680.
- Bernard A, Buchet JP, Roels H, et al. 1979. Renal excretion of proteins and enzymes in workers exposed to cadmium. *Eur J Clin Invest* 9:11-22.
- Bernard A, Goret A, Buchet JP, et al. 1980. Significance of cadmium levels in blood and urine during long-term exposure of rats to cadmium. *J Toxicol Environ Health* 6:175-184.
- Bernard A, Lauwerys R, Amor AO. 1992. Loss of glomerular polyanion correlated with albuminuria in experimental cadmium nephropathy. *Arch Toxicol* 66:272-278.
- Bernard A, Stolte H, DeBroe ME, et al. 1997. Urinary biomarkers to detect significant effects of environmental and occupational exposure to nephrotoxins. IV. Current information on interpreting the health implications of tests. *Renal Fail* 19(4):553-566.
- Bernard AM, de Russis R, Amor AO, et al. 1988a. Potentiation of cadmium nephrotoxicity by acetaminophen. *Arch Toxicol* 62:291-294.
- \*Bernard AM, Lauwerys R, Gengoux P, et al. 1984. Anti-laminin antibodies in Sprague-Dawley and brown Norway rats chronically exposed to cadmium. *Toxicology* 31:307-313.
- \*Bernard AM, Ouled A, Roels H, et al. 1988b. Lack of relationship between urinary glycosaminoglycans and indices of tubular or glomerular renal damage: Urinary GAG are an unreliable nephrotoxicity index. *Nephron* 48:82-83.
- \*Bernard AM, Ouled Amor A, Lauwerys RR. 1988c. Decrease of erythrocytes and glomerular membrane negative charges in chronic cadmium poisoning. *Br J Ind Med* 45:112-115.
- Bernard AM, Roels H, Cardenas A, et al. 1990. Assessment of urinary protein 1 and transferrin as early markers of cadmium nephrotoxicity. *Br J Ind Med* 47:559-565.
- Beton DC, Andrews GS, Davies HJ, et al. 1966. Acute cadmium fume poisoning; five cases with one death from renal necrosis. *Br J Ind Med* 23:292-301.
- \*Bevan C, Foulkes EC. 1989. Interaction of cadmium with brush border membrane vesicles from the rat small intestine. *Toxicology* 54:297-309.

## 9. REFERENCES

- Beyer WN. 1986. A reexamination of biomagnification of metals in terrestrial food chains [Letter]. *Environ Toxicol Chem* 5:863-864.
- Beyer WN, Stafford C. 1993. Survey and evaluation of contaminants in earth worms and in soils derived from dredged material at confined disposal facilities in the Great Lakes region. *Environ Monit Assess* 24:151-165.
- Beyer WN, Hensler G, Moore J. 1987. Relation of pH and other soil variables to concentrations of Pb, Cu, Zn, Cd, and Se in earthworms. *Pedobiologia* 30:167-172.
- Bhattacharyya MH, Sellers DA, Peterson DP. 1986. Postlactational changes in cadmium retention and mice orally exposed to cadmium during pregnancy and lactation. *Environ Res* 40:145-154.
- Bhattacharyya MH, Whelton BD, Peterson DP. 1981. Gastrointestinal absorption of cadmium in mice during gestation and lactation. I. Short-term exposure studies. *Toxicol Appl Pharmacol* 61:335-342.
- Bhattacharyya MH, Whelton DB, Peterson DP. 1982. Gastrointestinal absorption of cadmium in mice during gestation and lactation. II. Continuous exposure studies. *Toxicol Appl Pharmacol* 66:368-375.
- Bhattacharyya MH, Whelton BD, Peterson DP, et al. 1988a. Kidney changes in multiparous mice fed a nutrient-sufficient diet containing cadmium. *Toxicology* 50:205-215.
- Bhattacharyya MH, Whelton BD, Peterson DP, et al. 1988b. Skeletal changes in multiparous mice fed a nutrient-sufficient diet containing cadmium. *Toxicology* 50:193-204.
- Bhattacharyya MH, Whelton BD, Stern PH, et al. 1988c. Cadmium accelerates bone loss in ovariectomized mice and fetal rat limb bones in culture. *Proc Natl Acad Sci* 85:8761-8765.
- Bjornberg A. 1963. Reactions to light in yellow tattoos from cadmium sulfide. *Arch Dermatol* 88:267-271.
- Blaha K, Nerudova J, Jehlicova H, et al. 1995. *In vivo* and *in vitro* efficacy of a new carbodithioate for the mobilization of cadmium. *J Toxicol Environ Health* 44:87-100.
- Blainey JD, Adams RG, Brewer DB, et al. 1980. Cadmium-induced osteomalacia. *Br J Ind Med* 37:278-284.
- Blakley BR. 1985. The effect of cadmium chloride on the immune response in mice. *Can J Comp Med* 49:104-108.
- Blakley BR. 1986. The effect of cadmium on chemical- and viral-induced tumor production in mice. *J Appl Toxicol* 6:425-429.
- Blakley BR. 1988. Humoral immunity in aged mice exposed to cadmium. *Can J Vet Res* 52:291-292.
- \*Boisset M, Girard F, Godin J, et al. 1978. Cadmium content of lung, liver and kidney in rats exposed to cadmium oxide fumes. *Int Arch Occup Environ Health* 41:41-53.
- Bomhard E, Maruhn D, Paar D, et al. 1984. Urinary enzyme measurements as sensitive indicators of chronic cadmium nephrotoxicity. *Contrib Nephrol* 42:142-147.

## 9. REFERENCES

- Bomhard E, Vogel O, Loser E. 1987. Chronic effects on single and multiple oral and subcutaneous cadmium administration on the testes of Wistar rats. *Cancer Lett* 36:307-315.
- Bonnell JA. 1955. Emphysema and proteinuria in men casting copper-cadmium alloys. *Br J Ind Med* 12:181-197.
- Bonnevie NL, Huntley SL, Found BW, et al. 1994. Trace metal contamination in surficial sediments for Newark Bay, New Jersey. *Sci Total Environ* 144:1-16.
- \*Borgman RF, Au B, Chandra RK. 1986. Immunopathology of chronic cadmium administration in mice. *Int J Immunopharmacol* 8:813-817.
- Börjesson J, Bellander T, Järup L, et al. 1997. *In vivo* analysis of cadmium in battery workers versus measurements of blood, urine, and workplace air. *Occup Environ Med* 54(6):424-431.
- Börjesson J, Gerhardsson L, Schutz A, et al. 2001. Kidney cadmium as compared to other markers of cadmium exposure in workers at a secondary metal smelter. *Am J Ind Med* 39(1):19-28.
- Borzelleca JF, Clarke EC, Condcie LW. 1989. Short-term toxicity (1 and 10 days) of cadmium chloride in male and female rats: Gavage and drinking water. *J Am Coll Toxicol* 8:377-404.
- Boscolo P, Carmignani M. 1986. Mechanisms of cardiovascular regulation in male rabbits chronically exposed to cadmium. *Br J Ind Med* 43:605-610.
- Boudreau J, Vincent R, Nadeau D, et al. 1989. The response of the pulmonary surfactant-associated alkaline phosphatase following acute cadmium chloride inhalation. *Am Ind Hyg Assoc J* 50:331-335.
- Boularbah A, Morel JL, Bitton, et al. 1992. Cadmium biosorption and toxicity to six cadmium-resistant gram-positive bacteria isolated from contaminated soil. *Environ Toxicol Water Qual* 7:237-246.
- Bouley G, Arsac F, Dubreuil A, et al. 1984. Natural and acquired resistance of mice to infection by airborne *Klebsiella pneumoniae* after subchronic intoxication by cadmium administered orally. *Sci Total Environ* 38:55-62.
- Bouley G, Chaumard C, Quero AM, et al. 1982. Opposite effects of inhaled cadmium microparticles on mouse susceptibility to an airborne bacterial and an airborne viral infection. *Sci Total Environ* 23:185-188.
- Bråtveit, M; Mageroy, N; Gundersen, H; et al. 2011. Biomarker of chronic cadmium exposure in a population residing in the vicinity of a zinc producing plant. *Sci Total Environ* 409:4222-4228.
- Brockhaus A, Collet W, Dolgner R, et al. 1988. Exposure to lead and cadmium of children living in different areas of North-West Germany: Results of biological monitoring studies 1982-1986. *Int Arch Occup Environ Health* 60:211-222.
- Bronstein AC, Currance PL. 1988. Emergency care for hazardous materials exposure. St. Louis, MO: The C.V. Mosby Company, 133-134.
- Bruce WR, Heddle JA. 1979. The mutagenic activity of 61 agents as determined by the micronucleus, *salmonella*, and sperm abnormality assays. *Can J Genet Cytol* 21:319-334.

## 9. REFERENCES

- Bruhn JC, Franke AA. 1976. Lead and cadmium in California raw milk. *J Dairy Sci* 59:1711-1717.
- Brumbaugh WG, Schmitt CJ, May TW. 2005. Concentrations of cadmium, lead, and zinc in fish from mining-influenced waters of Northeastern Oklahoma: Sampling of blood, carcass, and liver for aquatic biomonitoring. *Arch Environ Contam Toxicol* 49:76-88.
- Brzóška MM. 2012. Low-level chronic exposure to cadmium enhances the risk of long bone fractures: A study on a female rat model of human lifetime exposure. *J Appl Toxicol* 32(1):34-44.
- Brzóška MM, Moniuszko-Jakoniuk J. 2004a. Low-level exposure to cadmium during the lifetime increases the risk of osteoporosis and fractures of the lumbar spine in the elderly: Studies on a rat model of human environmental exposure. *Toxicol Sci* 82:468-477.
- Brzóška MM, Moniuszko-Jakoniuk J. 2004b. Low-level lifetime exposure to cadmium decreases skeletal mineralization and enhances bone loss in aged rats. *Bone* 35(5):1180-1191.
- Brzóška MM, Moniuszko-Jakoniuk J. 2005a. Bone metabolism of male rats chronically exposed to cadmium. *Toxicol Appl Pharmacol* 207(3):195-211.
- Brzóška MM, Moniuszko-Jakoniuk J. 2005b. Effect of chronic exposure to cadmium on the mineral status and mechanical properties of lumbar spine of male rats. *Toxicol Lett* 157(2):161-172.
- Brzóška MM, Moniuszko-Jakoniuk J. 2005c. Effect of low-level lifetime exposure to cadmium on calcitropic hormones in aged female rats. *Arch Toxicol* 79(11):636-646.
- Brzóška MM, Moniuszko-Jakoniuk J. 2005d. Disorders in bone metabolism of female rats chronically exposed to cadmium. *Toxicol Appl Pharmacol* 202(1):68-83.
- \*Brzóška MM, Kaminski M, Dziki M, et al. 2004a. Changes in the structure and function of the kidney of rats chronically exposed to cadmium. II. Histoenzymatic studies. *Arch Toxicol* 78(4):226-231.
- Brzóška MM, Majewska K, Kupraszewicz E. 2010. Effects of low, moderate and relatively high chronic exposure to cadmium on long bones susceptibility to fractures in male rats. *Environ Toxicol Pharmacol* 29(3):235-245.
- Brzóška MM, Majewska K, Moniuszko-Jakoniuk J. 2004b. Mineral status and mechanical properties of lumbar spine of female rats chronically exposed to various levels of cadmium. *Bone* 34(3):517-526.
- Brzóška MM, Majewska K, Moniuszko-Jakoniuk J. 2005a. Bone mineral density, chemical composition and biomechanical properties of the tibia of female rats exposed to cadmium since weaning up to skeletal maturity. *Food Chem Toxicol* 43(10):1507-1519.
- Brzóška MM, Majewska K, Moniuszko-Jakoniuk J. 2005b. Mechanical properties of femoral diaphysis and femoral neck of female rats chronically exposed to various levels of cadmium. *Calcif Tissue Int* 76(4):287-298.
- Brzóška MM, Majewska K, Moniuszko-Jakoniuk J. 2005c. Weakness in the mechanical properties of the femur of growing female rats exposed to cadmium. *Arch Toxicol* 79(5):277-288.
- Buchet JP, Lauwerys R, Roels H, et al. 1990. Renal effects of cadmium body burden of the general population. *Lancet* 336:699-702.

## 9. REFERENCES

- Buckler HM, Smith WD, Rees WD. 1986. Self poisoning with oral cadmium chloride. *Br Med J* 292:1559-1560.
- \*Buckley BJ, Bassett DJ. 1987a. Glutathione redox status of control and cadmium oxide-exposed rat lungs during oxidant stress. *J Toxicol Environ Health* 22:287-299.
- Buckley BJ, Bassett DJ. 1987b. Pulmonary cadmium oxide toxicity in the rat. *J Toxicol Environ Health* 22:233-250.
- Buck Louis GM, Sundaram R, Schisterman EF, et al. 2012. Heavy metals and couple fecundity, the LIFE Study. *Chemosphere* [Epub ahead of print].
- Bui TH, Lindsten J, Nordberg GJ. 1975. Chromosome analysis of lymphocytes from cadmium workers and Itai-itai patients. *Environ Res* 9:187-195.
- \*Bunker VW, Lawson MS, Delues HT, et al. 1984. The intake and excretion of lead and cadmium by the elderly. *Am J Clin Nutr* 39:803-808.
- Burke BE, Pfister RM. 1988. The removal of cadmium from lake water by lake sediment bacteria. In: *Proceedings of the Annual Meeting of the American Society for Microbiology, Miami Beach, Florida, USA, May 8-13, 1988.*
- Bus JS, Vinegar A, Brooks SM. 1978. Biochemical and physiologic changes in lungs of rats exposed to a cadmium chloride aerosol. *Am Rev Respir Dis* 118:573-580.
- Bustueva KA, Revich BA, Bezpalko LE. 1994. Cadmium in the environment of three Russian cities and in human hair and urine. *Arch Environ Health* 49(4):284-288.
- Cabrera C, Lorenzo ML, Lopez MC. 1995. Lead and cadmium contamination in dairy products and its repercussion on total dietary intake. *J Agric Food Chem* 43:1605-1609.
- \*Cafilisch CR. 1994. Effect of orally administered cadmium on in situ pH, PCO<sub>2</sub>, and bicarbonate concentration in rat testis and epididymis. *J Toxicol Environ Health* 42(3):323-30.
- Cai MY, Arenaz P. 1998. Antimutagenic effect of crown ethers on heavy metal-induced sister chromatid exchanges. *Mutagenesis* 13:27-32.
- Cai S, Wang J, Xue J, et al. 1992. A judgment of attribution of increase in urine  $\beta_2$ -microglobulin after environmental cadmium exposure. *Biomed Environ Sci* 5(2):130-135.
- Cai S, Yui L, Hu Z, et al. 1990. Cadmium exposure and health effects among residents in an irrigation area with ore dressing wastewater. *Sci Total Environ* 90:67-73.
- Cai S, Yue L, Jin T, et al. 1998. Renal dysfunction from cadmium contamination of irrigation water: Dose-response analysis in a Chinese population. *Bull World Health Org* 76(22):153-159.
- Cai Y, Aoshima K, Katoh T, et al. 2001. Renal tubular dysfunction in male inhabitants of a cadmium-polluted area in Toyama, Japan-an eleven year follow-up study. *J Epidemiol* 11(4):180-189.

## 9. REFERENCES

- Campbell KR. 1994. Concentrations of heavy metals associated with urban runoff in fish living in stormwater treatment ponds. *Arch Environ Contam Toxicol* 27:352-356.
- Canfield TJ, Kemble NE, Brumbaugh WG, et al. 1994. Use of benthic invertebrate community structure and the sediment quality triad to evaluate metal-contaminated sediment in the upper Clark Fork River, Montana. *Environ Toxicol Chem* 13(12):1999-2012.
- Cantilena LR, Klaassen CD. 1980. The effect of ethylenediaminetetraacetic acid (EDTA) and EDTA plus salicylate on acute cadmium toxicity and distribution. *Toxicol Appl Pharmacol* 53(3):510-514.
- Cantilena LR, Klaassen CD. 1981. Comparison of the effectiveness of several chelators after single administration on the toxicity, excretion, and distribution of cadmium. *Toxicol Appl Pharmacol* 58:452-460.
- Cantilena LR, Klaassen CD. 1982a. Decreased effectiveness of chelation therapy with time after acute cadmium poisoning. *Toxicol Appl Pharmacol* 63:173-180.
- Cantilena LR, Klaassen CD. 1982b. The effect of repeated administration of several chelators on the distribution and excretion of cadmium. *Toxicol Appl Pharmacol* 66:361-367.
- Cao, Y; Chen, A; Radcliffe, J; et al. 2009. Postnatal cadmium exposure, neurodevelopment, and blood pressure in children at 2, 5, and 7 years of age. *Environ Health Perspect* 117(10):1580-1586.
- Capar SG, Cunningham WC. 2000. Element and radionuclide concentrations in food: FDA total diet study 1991-1996. *J AOAC Int* 83(1):157-177.
- Capar SG, Yess NJ. 1996. U.S. Food and Drug Administration survey of cadmium, lead and other elements in clams and oysters. *Food Addit Contam* 13(5):553-560.
- Caravati EM, McGuigan MA, MacGregor Whyte I, et al. Cadmium fume pneumonitis. In: *Medical toxicology*, 3rd ed. Philadelphia, PA: Lippincott Williams & Wilkins, 1411-1414/
- Cardenas A, Bernard A, Lauwerys R. 1992a. Incorporation of [<sup>35</sup>S]sulfate into glomerular membranes of rats chronically exposed to cadmium and its relation with urinary glycosaminoglycans and proteinuria. *Toxicology* 76:219-231.
- Cardenas A, Remis I, Hotter G, et al. 1992b. Human and experimental studies on renal eicosanoid response to long term cadmium exposure. *Toxicol Appl Pharmacol* 116:155-160.
- Caride A, Fernandez-Perez B, Cabaleiro T, et al. 2010b. Cadmium chronotoxicity at pituitary level: effects on plasma ACTH, GH, and TSH daily pattern. *J Physiol Biochem* 66(3):213-22
- Caride A, Fernandez Perez B, Cabaleiro T, et al. 2010a. Daily pattern of pituitary glutamine, glutamate, and aspartate content disrupted by cadmium exposure. *Amino Acids* 38(4):1165-1172.
- Carmignani N, Boscolo P. 1984. Cardiovascular responsiveness to physiological agonists of female rats made hypertensive by long-term exposure to cadmium. *Sci Total Environ* 34:19-33.
- \*Carroll RE. 1966. The relationship of cadmium in the air to cardiovascular disease death rates. *JAMA* 198:267-269.

## 9. REFERENCES

- Carvalho FM, Silvany-Neto AM, Melo AM, et al. 1989. Cadmium in hair of children living near a lead smelter in Brazil. *Sci Total Environ* 84:119-128.
- Carvalho FM, Silvany-Neto AM, Lima MEC Atl, et al. 1986. Cadmium concentrations in blood of children living near a lead smelter in Bahia, Brazil. *Environ Res* 40:437-449.
- Casto BC, Meyers J, DiPaolo JA, et al. 1979. Enhancement of viral transformation for evaluation of the carcinogenic or mutagenic potential of inorganic metal salts. *Cancer Res* 39:193-198.
- CDC. 2005. Third national report on human exposure to environmental chemicals. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.
- CDC. 2011. Fourth national report on human exposure to environmental chemicals, updated tables, February 2011. [http://www.cdc.gov/exposurereport/pdf/Updated\\_Tables.pdf](http://www.cdc.gov/exposurereport/pdf/Updated_Tables.pdf). January 11, 2012.
- CDC. 2012. Fourth national report on human exposure to environmental chemicals, updated tables, February 2012. Atlanta, GA: Centers for Disease Control and Prevention. [http://www.cdc.gov/exposurereport/pdf/FourthReport\\_UpdatedTables\\_Feb2012.pdf](http://www.cdc.gov/exposurereport/pdf/FourthReport_UpdatedTables_Feb2012.pdf). September 10, 2012.
- Cerny EA, Bhattacharyya MH. 2003. Low-volume, high-sensitivity assay for cadmium in blood and urine using conventional atomic absorption spectrophotometry. *Anal Biochem* 314(2):190-193.
- Cha CW. 1987. A study on the effect of garlic to the heavy metal poisoning of rat. *J Korean Med Sci* 2:213-224.
- Chan HM, Cherian MG. 1993. Mobilization of hepatic cadmium in pregnant rats. *Toxicol Appl Pharmacol* 120:308-314.
- Chan OY, Poh SC, Lee HS, et al. 1988. Respiratory function in cadmium battery workers: A follow-up study. *Ann Acad Med Singapore* 17:283-287.
- Chang PP, Robinson JW. 1993. Development of thermospray interfaced HPLC-FAAS system for studies on cadmium speciation in human body fluid. *Spectrosc Lett* 26(10):2017-2035.
- \*Chatterjee MS, Abdel-Rahman M, Bhandal A, et al. 1988. Amniotic fluid cadmium and thiocyanate in pregnant women who smoke. *J Reprod Med* 33:417-420.
- \*Chen WK, Chung C. 1989. *In vivo* and *in vitro* medical diagnoses of toxic cadmium in rats. *J Radioanal Nucl Chem* 133(2):349-358.
- Chen L, Jin T, Huang B, et al. 2006a. Plasma metallothionein antibody and cadmium-induced renal dysfunction in an occupation population in China. *Toxicol Sci* 91(1):104-112.
- Chen L, Jin T, Huang B, et al. 2006b. Critical exposure level of cadmium for elevated urinary metallothionein: An occupational population study in China. *Toxicol Appl Pharmacol* 215(1):93-99.
- Chen L, Lei L, Jin T, et al. 2006c. Plasma metallothionein antibody, urinary cadmium, and renal dysfunction in a Chinese type 2 diabetic population. *Diabetes Care* 29:2682-2687.

## 9. REFERENCES

- Chen RW, Whanger PD, Weswig PH. 1975. Selenium induced redistribution of cadmium-binding to tissue proteins: A possible mechanism of protection against cadmium toxicity. *Bioinorg Chem* 4:125.
- Chen X, Zhu G, Jin T, et al. 2009. Effects of cadmium on forearm bone density after reduction of exposure for 10 years in a Chinese population. *Environ Int* 35(8):1164-1168.
- Chen X, Zhu G, Jin T, et al. 2011. Bone mineral density is related with previous renal dysfunction caused by cadmium exposure. *Environ Toxicol Pharmacol* 32(1):46-53.
- Cherian MG, Shaikh ZA. 1975. Metabolism of intravenously injected cadmium-binding protein. *Biochem Biophys Res Commun* 65:863-869.
- Chettle DR, Ellis KJ. 1992. Further scientific issues in determining an occupational standard for cadmium. *Am J Ind Med* 22:117-124.
- Chia KS, Ong CN, Ong HY, et al. 1989. Renal tubular function of workers exposed to low levels of cadmium. *Br J Ind Med* 46:165-170.
- Chia KS, Tan AL, Chia SE, et al. 1992. Renal tubular function of cadmium exposed workers. *Ann Acad Med Singapore* 21(6):756-759.
- \*Chiarenza A, Elverdin JC, Espinal E, et al. 1989. Effects of cadmium on the function and structure of the rat salivary glands. *Arch Oral Biol* 34:999-1002.
- \*Chmielnicka J, Halatek T, Jedlinska U. 1989. Correlation of cadmium-induced nephropathy and the metabolism of endogenous copper and zinc in rats. *Ecotoxicol Environ Saf* 18:268-276.
- Chopra RK, Prasad R, Sharma N, et al. 1984. Effect of dietary chronic cadmium exposure on cell-mediated immune response in Rhesus monkeys (*Macaca mulatta*): Role of calcium deficiency. *Arch Toxicol* 56:128-131.
- Choudhury H, Harvey T, Thayer WC, et al. 2001. Urinary cadmium elimination as a biomarker of exposure for evaluating a cadmium dietary exposure-biokinetics model. *J Toxicol Environ Health A* 63:321-350.
- Christoffersson JO, Welinder H, Spang G, et al. 1987. Cadmium concentration in the kidney cortex of occupationally exposed workers measured *in vivo* using X-ray fluorescence analysis. *Environ Res* 42:489-499.
- Chung J, Nartey NO, Cherian MG. 1986. Metallothionein levels in liver and kidney of Canadians: A potential indicator of environmental exposure to cadmium. *Arch Environ Health* 41:319-323.
- Cifone MG, Alesse E, Di Egenio R, et al. 1989a. *In vivo* cadmium treatment alters natural killer activity and large granular lymphocyte number in the rat. *Immunopharmacology* 18:149-156.
- \*Cifone MG, Alesse E, Procopio A, et al. 1989b. Effects of cadmium on lymphocyte activation. *Biochim Biophys Acta* 1011:25-32.
- \*Clark DE, Nation JR, Bourgeois AJ, et al. 1985. The regional distribution of cadmium in the brains of orally exposed adult rats. *Neurotoxicology* 6:109-114.

## 9. REFERENCES

- Clewell HJ, Andersen M. 1985. Risk assessment extrapolations and physiological modeling. *Toxicol Ind Health* 1(4):111-131.
- Cole RH, Frederick RE, Healy RP, et al. 1984. Preliminary findings of the Priority Pollutant Monitoring Project of the Nationwide Urban Runoff Program. *J Water Pollut Contr Fed* 56:898-908.
- Cordero MTS, de Torres AG, Pavon JMC. 1994. Solvent extraction of cadmium as a previous step for its determination in biological samples by inductively coupled plasma atomic emission spectrometry. *Anal Lett* 27(9):1689-1701.
- Cortona G, Apostoli P, Toffoletto F, et al. 1992. Occupational exposure to cadmium and lung function. In: Nordberg GF, Herber RFM, Alessio L, eds. *Cadmium in the human environment: Toxicity and carcinogenicity*. IARC Scientific Publications No. 118. Lyon, France: International Agency for Research on Cancer, 205-210.
- Cousins RJ, Barber AK, Trout JR. 1973. Cadmium toxicity in growing swine. *J Nutr* 103:964-972.
- Cresta L, Perdelli F, Franco Y, et al. 1989. [Possible correlations between urinary cadmium and fetal growth retardation in pregnant women who smoke.] *Minerva Genecol* 41:85-88. (Italian)
- Crews HM, Dean JR, Ebdon L, et al. 1989. Application of high-performance liquid chromatography-inductively coupled plasma mass spectrometry to the investigation of cadmium speciation in pig kidney following cooking and *in vitro* gastrointestinal digestion. *Analyst* 114:895-899.
- Crews HM, Owen LM, Langford N, et al. 2000. Use of the stable isotope  $^{106}\text{Cd}$  for studying dietary cadmium absorption in humans. *Toxicol Lett* 112-113:201-207.
- Cummins PE, Dutton J, Evans CJ, et al. 1980. An *in vivo* study of renal cadmium and hypertension. *Eur J Clin Invest* 10:459-461.
- Dabeka RW. 1979. Graphite furnace atomic absorption spectrometric determination of lead and cadmium in foods after solvent extraction and stripping. *Anal Chem* 51:902-907.
- Daih B, Huang H. 1992. Determination of trace elements in sea water by flow-injection anodic stripping voltammetry preceded by immobilized quinolin-8-ol silica gel preconcentration. *Anal Chim Acta* 258:245-252.
- Daniels MJ, Menache MG, Burlison GR, et al. 1987. Effects of  $\text{NiCl}_2$  and  $\text{CdCl}_2$  on susceptibility to murine cytomegalovirus and virus-augmented natural killer cell and interferon responses. *Fundam Appl Toxicol* 8:443-453.
- Davison AG, Fayers PM, Taylor AJ, et al. 1988. Cadmium fume inhalation and emphysema. *Lancet* 1(8587):663-667.
- Deaven LL, Campbell EW. 1980. Factors affecting the induction of chromosomal aberrations by cadmium in Chinese hamster cells. *Cytogenet Cell Genet* 26:251-260.
- de Burbure C, Buchet JP, Leroyer A, et al. 2006. Renal and neurologic effects of cadmium, lead, mercury, and arsenic in children: Evidence of early effects and multiple interactions at environmental exposure levels. *Environ Health Perspect* 114(8):A458.

## 9. REFERENCES

- Debusk TA, Laughlin R B JR, Schwartz LN. 1996. Retention and compartmentalization of lead and cadmium in wetland microcosms. *Water Res* 30 (11):2707-2716.
- Decker LE, Byerrum RU, Decker CF, et al. 1958. Chronic toxicity studies. I. Cadmium administered in drinking water to rats. *AMA Arch Ind Health* 18:228-231.
- Deknudt G, Gerber GB. 1979. Chromosomal aberrations in bone marrow cells of mice given a normal or a calcium-deficient diet supplemented with various heavy metals. *Mutat Res* 68:163-168.
- Deknudt G, Deminatti M. 1978. Chromosome studies in human lymphocytes after *in vitro* exposure to metal salts. *Toxicology* 10:67-75.
- Deknudt G, Leonard A. 1975. Cytogenetic investigations on leucocytes of workers from a cadmium plant. *Environ Physiol Biochem* 5:319-327.
- Deknudt G, Leonard A, Ivanov B. 1973. Chromosome aberrations in male workers occupationally exposed to lead. *Environ Physiol Biochem* 3:132-138.
- de Kort WL, Verschoor MA, Wibowo AA, et al. 1987. Occupational exposure to lead and blood pressure: A study in 105 workers. *Am J Ind Med* 11:145-156.
- Denizeau F, Marion M. 1989. Genotoxic effects of heavy metals in rat hepatocytes. *Cell Biol Toxicol* 5:15-26.
- Depault F, Cojocar M, Fortin F, et al. 2006. Genotoxic effects of chromium(VI) and cadmium(II) in human blood lymphocytes using the electron microscopy *in situ* end-labeling (EM-ISEL) assay. *Toxicol In Vitro* 20(4):513-518.
- Dervan PA, Hayes JA. 1979. Peribronchiolar fibrosis following acute experimental lung damage by cadmium aerosol. *J Pathol* 128:143-149.
- Desi I, Nagymajtenyi L, Schulz H. 1998. Behavioral and neurotoxicological changes caused by cadmium treatment of rats during development. *J Appl Toxicol* 18(1):63-70.
- Desi I, Nehez M, Siroki O, et al. 2000. Small subchronic doses of the pesticide dimethoate and/or cadmium and lead treatment causes disturbances in the chromosomes of young rats. *Cent Eur J Public Health* 8:59-60.
- Devi KD, Banu BS, Mahboob M, et al. 2001. *In vivo* genotoxic effect of cadmium chloride in mice leukocytes using comet assay. *Teratog Carcinog Mutagen* 21(5):325-333.
- DHHS. September 1995. Report to Congress on workers' home contamination study conducted under the workers' family protection act (29 U.S.C. 671a). Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health.
- Diamond GL, Thayer WC, Choudhury H. 2003. Pharmacokinetics/pharmacodynamics (PK/PD) modeling of risks of kidney toxicity from exposure to cadmium: Estimates of dietary risks in the U.S. population. *J Toxicol Environ Health A* 66:2141-2164.

## 9. REFERENCES

- \*Diaz-Barriga F, Santos MA, Mejia JDJ, et al. 1993. Arsenic and cadmium exposure in children living near a smelter complex in San Luis Potosi, Mexico. *Environ Res* 62(2):242-250.
- Ding X, Jiang J, Wang Y, et al. 1994. Bioconcentration of cadmium in water hyacinth (*Eichhornia crassipes*) in relation to thiol group content. *Environ Pollut* 84(1):93-96.
- DiPaulo JA, Castro BC. 1979. Quantitative studies of *in vitro* morphological transformation of Syrian hamster cells by inorganic metal salts. *Cancer Res* 39:1008-1013.
- Dixon RL, Lee IP, Sherins RJ. 1976. Methods to assess reproductive effects of environmental chemicals: Studies of cadmium and boron administered orally. *Environ Health Perspect* 13:59-67.
- DOI. 1985. Cadmium hazards to fish, wildlife, and invertebrates: A synoptic view. U.S. Fish and Wildlife Service Biological Report 85(1.2). Washington, DC: U.S. Department of the Interior.
- Doll R. 1992. Is cadmium a human carcinogen? *Ann Epidemiol* 2:335-337.
- Dorian C, Gattone VH, Klaasen CD. 1992a. Renal cadmium deposition and injury as a result of accumulation of cadmium-metallothionein (CdMT) by the proximal convoluted tubules: A light microscopic autoradiography study with <sup>109</sup>CdMT. *Toxicol Appl Pharmacol* 114:173-181.
- Dorian C, Gattone VH, Klaasen CD. 1992b. Accumulation and degradation of the protein moiety of cadmium-metallothionein (CdMT) in the mouse kidney. *Toxicol Appl Pharmacol* 117:242-248.
- Dorian C, Gattone VH, Klaasen CD. 1995. Discrepancy between the nephrotoxic potencies of cadmium - metallothionein and cadmium chloride and the renal concentration of cadmium in the proximal convoluted tubules. *Toxicol Appl Pharmacol* 130:161-168.
- Dorian C, Klaassen CD. 1995. Protection by zinc-metallothionein (znmt) against cadmium-metallothionein-induced nephrotoxicity. *Fundam Appl Toxicol* 26(1):99-106.
- Doyle JJ, Pfander WH, Grebing SE, et al. 1974. Effect of dietary cadmium on growth, cadmium absorption and cadmium tissue levels in growing lambs. *J Nutr* 104(2):160-166.
- \*Drasch GA, Kretschmer E, Neidlinger P, et al. 1989. Cadmium, zinc, copper and metallothionein in human tissues (liver and kidney). *Toxicol Environ Chem* 23:207-214.
- Driscoll KE, Maurer JK, Poynter J, et al. 1992. Stimulation of rat alveolar macrophage fibronectin release in a cadmium chloride model of lung injury and fibrosis. *Toxicol Appl Pharmacol* 116:30-37.
- Dudley RE, Gammal LM, Klaassen CD. 1985. Cadmium-induced hepatic and renal injury in chronically exposed rats: Likely role of hepatic cadmium-metallothionein in nephrotoxicity. *Toxicol Appl Pharmacol* 77:414-426.
- Edling C, Elinder CG, Randma E. 1986. Lung function in workers using cadmium-containing solders. *Br J Ind Med* 43:657-662.
- \*Eggert-Kruse W, Rohr G, Jochum R, et al. 1992. [The effect of heavy metals on the *in vitro* interaction between human sperm and cervical mucus]. *Dtsch Med Wochenschr* 117(37):1383-1389. (German)

## 9. REFERENCES

- Egwuogu H, Shendell DG, Okosun IS, et al. 2009. The effect of urinary cadmium on cardiovascular fitness as measured by VO<sub>2</sub> max in white, black and Mexican Americans. *Environ Res* 109(3):292-300.
- Eklund G, Grawe KP, Oskarsson A. 2001. Bioavailability of cadmium from infant diets in newborn rats. *Arch Toxicol* 75:522-530.
- Eklund G, Tallkvist J, Oskarsson A. 2004. A piglet model for studies of gastrointestinal uptake of cadmium in neonates. *Toxicol Lett* 146(3):237-247.
- Elinder CG. 1985a. Cadmium: Uses, occurrence and intake. In: Friberg L, Elinder CG, Kjellström T, et al., eds. *Cadmium and health: A toxicological and epidemiological appraisal*. Vol. I. Exposure, dose, and metabolism. Effects and response. Boca Raton, FL: CRC Press, 23-64.
- Elinder CG. 1985b. Normal values for cadmium in human tissue, blood and urine in different countries. In: Friberg L, Elinder CG, Kjellström T, et al., eds. *Cadmium and health: A toxicological and epidemiological appraisal*. Vol. I. Exposure, dose, and metabolism. Effects and response. Boca Raton, FL: CRC Press, 81-102.
- Elinder CG. 1986b. Respiratory effects. In: Friberg L, Elinder CG, Kjellström T, et al., eds. *Cadmium and health: A toxicological and epidemiological appraisal*. Vol. II. Effects and response. Boca Raton, FL: CRC Press, 1-20.
- Elinder CG. 1992. Cadmium as an environmental hazard. *IARC Sci Publ* 118:123-132.
- Elinder CG, Lind B. 1985. Principles and problems of cadmium analysis. In: Friberg L, Elinder CG, Kjellström T, et al., eds. *Cadmium and health: A toxicological and epidemiological appraisal*. Vol. I. Boca Raton, FL: CRC Press, 7-22.
- Elinder CG, Edling C, Lindberg E, et al. 1985a. Assessment of renal function in workers previously exposed to cadmium. *Br J Ind Med* 42:754-760.
- Elinder CG, Edling C, Lindberg E, et al. 1985b.  $\beta_2$ -Microglobulinuria among workers previously exposed to cadmium: Follow-up and dose-response analyses. *Am J Ind Med* 8:553-564.
- Elinder CG, Kjellström T, Hogstedt C, et al. 1985c. Cancer mortality of cadmium workers. *Br J Ind Med* 42:651-655.
- Elinder CG, Kjellström T, Lind B, et al. 1978. Cadmium concentrations in human liver, blood, and bile: Comparison with a metabolic model. *Environ Res* 17(2):236-241.
- Ellenhorn MJ, Barceloux DJ. 1988. *Medical toxicology: Diagnosis and treatment of human poisoning*. New York, NY: Elsevier, 1018-1020.
- Ellis KJ. 1985. Dose-response analysis of heavy metal toxicants in man: Direct *in vivo* assessment of body burden. *Trace Subst Environ Health* 19:149-159.
- Ellis KJ, Cohn SH, Smith TJ. 1985. Cadmium inhalation exposure estimates: Their significance with respect to kidney and liver cadmium burden. *J Tox Environ Health* 15:173-187.
- Ellis KJ, Vartsky D, Zanzi I, et al. 1979. Cadmium: *In vivo* measurement in smokers and nonsmokers. *Science* 205:323-325.

## 9. REFERENCES

Ellis KJ, Yuen K, Yasumura S, et al. 1984. Dose-response analysis of cadmium in man: Body burden vs kidney dysfunction. *Environ Res* 33:216-226.

Engström A, Skerving S, Lidfeldt J, et al. 2009. Cadmium-induced bone effect is not mediated via low serum 1,25-dihydroxy vitamin D. *Environ Res* 109(2):188-192.

Engström B, Nordberg GF. 1979. Dose-dependence of gastrointestinal absorption and biological half-time of cadmium in mice. *Toxicology* 13:215-222.

\*Engström B, Norin H, Jawaid M, et al. 1980. Influence of different Cd-EDTA complexes on distribution and toxicity of cadmium in mice after oral or parenteral administration. *Acta Pharmacol Toxicol (Copenh)* 46:219-234.

EPA. 1979. Water-related fate of 129 priority pollutants. Washington, DC: U.S. Environmental Protection Agency, Office of Water Planning and Standards. EPA 440479029a.

\*EPA. 1980a. Ambient air quality criteria for cadmium. Washington, DC.: U.S. Environmental Protection Agency, Office of Water Regulations and Standards. EPA440580025.

\*EPA. 1980b. Land treatment waste analysis. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 265.273.

\*EPA. 1980c. Land treatment: Food chain crops. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 265.276.

EPA. 1980d. Atmospheric cycles of cadmium and lead: Emissions, transport, transformation and removal. U.S. Environmental Protection Agency, 1-6 to 1-17; 2-14 to 2-41.

EPA. 1981a. Health assessment document for cadmium. Research Triangle Park, NC: U.S. Environmental Protection Agency. EPA600881023. PB82115163.

\*EPA. 1981b. Electroplating pretreatment standards. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 413.14.

EPA. 1982a. Intermedia priority pollutant guidance documents. Cadmium. Washington, DC: U.S. Environmental Protection Agency, Office of Toxics Integration.

\*EPA. 1982b. Methods for chemical analysis of water and wastes. Method 200.7. Inductively coupled plasma - atomic emission spectrometric method for trace element analysis of water and wastes. Cincinnati, OH: U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory. EPA600479020.

EPA. 1983a. Methods for chemical analysis of water and wastes. Method 213.1 (Atomic absorption, direct aspiration). Cincinnati, OH: U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory. EPA600479020.

EPA. 1983b. Methods for chemical analysis of water and wastes. Method 213.2 (Atomic absorption, furnace technique). Cincinnati, OH: U.S. Environmental Protection Agency, Office of Research and Development, Environmental Monitoring and Support Laboratory. EPA600479020.

## 9. REFERENCES

- EPA. 1983c. Treatability manual. Vol. I. Treatability data. Washington, DC: U.S. Environmental Protection Agency, Office of Research and Development. EPA600282001a.
- EPA. 1985a. Cadmium contamination of the environment: An assessment of nationwide risk. Washington, DC: U.S. Environmental Protection Agency, Office of Water Regulations and Standards. EPA 440485023.
- \*EPA. 1985b. Summary of environmental profiles and hazard indices for constituents of municipal sludge. Washington, DC: U.S. Environmental Protection Agency, Office of Water Regulations and Standards, Wastewater Solids Criteria Branch.
- \*EPA. 1986a. Test methods for evaluating solid waste. 3rd ed. SW-846. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response.
- \*EPA. 1986b. Reportable quantity. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 117.3.
- \*EPA. 1986c. Cadmium: Atomic absorption, furnace method. Method 7131. In: Test methods for evaluating solid waste. Washington, DC: U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. SW-846, 206-209.
- EPA. 1986d. General pretreatment regulations: 65 toxic pollutants. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 403, Appendix B.
- EPA. 1986e. Method 7130. Cadmium (atomic absorption, direct aspiration). In: Test methods for evaluating solid waste. Volume 1A: Laboratory manual physical/chemical methods. Washington, DC: U.S. Environmental Protection Agency. SW-846.
- \*EPA. 1989a. . New source performance standards for sewage treatment plants: Test methods and procedures. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 60.154.
- \*EPA. 1989b. Reportable quantities. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 302.4.
- \*EPA. 1989c. Interim methods for development of inhalation reference doses. Washington, DC: U.S. Environmental Protection Agency, Office of Health and Environmental Assessment. EPA600888066F.
- EPA. 1989d. Recognition and management of pesticide poisonings. Fourth edition. Washington, DC: U.S. Environmental Protection Agency. EPA540988001, 109-111.
- EPA. 1990a. National Pollutant Discharge Elimination System: Stormwater discharges. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 122.26.
- \*EPA. 1990b. Precision and recovery statements for methods for measuring metals. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 136, Appendix D.
- \*EPA. 1990c. Toxic Chemical Release Reporting Rule. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 372.65.

## 9. REFERENCES

EPA. 1990d. Interim methods for development of inhalation reference concentrations. Washington, DC: U.S. Environmental Protection Agency, Office of Health and Environmental Assessment, Office of Research and Development, Environmental Criteria and Assessment Office. EPA600/8-90/066A.

\*EPA. 1991a. Criteria to classify solid waste and disposal facilities: Maximum contaminant levels. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 257, Appendix I.

\*EPA. 1991b. Design criteria for municipal waste landfills. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 258.40.

EPA. 1991c. Constituents for detection monitoring. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 258, Appendix I.

EPA. 1993a. Effluent guidelines for offshore oil and gas extraction. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 435.13 and 15.

\*EPA. 1993b. National listing of state fish and shellfish consumption advisories and bans. U.S. Environmental Protection Agency. Research Triangle Institute, NC: Fish Contamination Section, Office of Science and Technology, Office of Water, U.S. Environmental Protection Agency.

EPA. 1993c. Incineration pollutant limits. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 46-47.

EPA. 1994a. Methods for derivation of inhalation reference concentrations and application of inhalation dosimetry. Washington, DC: U.S. Environmental Protection Agency, Office of Research and Development. EPA600/8-90/066F.

EPA. 1994b. Method 200.7: Determination of metals and trace elements in water and wastes by inductively coupled plasma-atomic emission spectrometry. Cincinnati, OH: U.S. Environmental Protection Agency, Office of Research and Development.

EPA. 1996a. Method 1637: Determination of trace elements in ambient waters by off-line chelation preconcentration and stabilized temperature graphite furnace atomic absorption. Washington, DC: U.S. Environmental Protection Agency, Office of Water.

EPA. 1996b. Method 1638: Determination of trace elements in ambient waters by inductively coupled plasma - mass spectrometry. Washington, DC: U.S. Environmental Protection Agency, Office of Water. <http://www.p2pays.org/ref/5C06/05111.pdf>. May 13, 2008.

EPA. 1997a. Special report on environmental endocrine disruption: An effects assessment and analysis. Washington, DC: U.S. Environmental Protection Agency, Risk Assessment Forum. EPA630/R-96/012.

EPA. 1997b. Method 1640: Determination of trace elements in water by preconcentration and inductively coupled plasma - mass spectrometry. Washington, DC: U.S. Environmental Protection Agency, Office of Water. <http://www.epa.gov/waterscience/methods/method/files/1640.pdf>. May 14, 2008.

EPA. 1998. Notice of availability of draft RCRA waste minimization PBT chemical list. U.S. Environmental Protection Agency. Fed Regist 63:60332. <http://www.gpoaccess.gov/fr/index.html>. May 05, 2008.

## 9. REFERENCES

- EPA. 2000. Method 6010C: Inductively coupled plasma-atomic emission spectrometry. Washington, DC: U.S. Environmental Protection Agency. <http://epa.gov/sw-846/pdfs/6010c.pdf>. May 13, 2008.
- \*EPA. 2003a. National primary drinking water standards. Washington, DC: U.S. Environmental Protection Agency, Office of Ground Water and Drinking Water. EPA816F03016. <http://www.epa.gov/safewater/mcl.html>. March 07, 2006.
- EPA. 2003b. Method 200.5: Determination of trace elements in drinking water by axially viewed inductively coupled plasma - atomic emission spectrometry. Cincinnati, OH: U.S. Environmental Protection Agency, Office of Research and Development. EPA600R06115. [http://www.epa.gov/nerlcwww/m\\_200\\_5.pdf](http://www.epa.gov/nerlcwww/m_200_5.pdf). May 13, 2008.
- EPA. 2005. Toxic chemical release inventory reporting forms and instructions: Revised 2004 version. Section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986). Washington, DC: U.S. Environmental Protection Agency. Office of Environmental Information. EPA260B05001.
- EPA. 2006a. Consumer factsheet on: Cadmium. U.S. Environmental Protection Agency. [http://www.epa.gov/OGWDW/contaminants/dw\\_contamfs/cadmium.html](http://www.epa.gov/OGWDW/contaminants/dw_contamfs/cadmium.html). April 29, 2008.
- EPA. 2006b. Technical factsheet on cadmium: Ground water and drinking water. <http://www.epa.gov/OGWDW/dwh/t-ioc/cadmium.html>. July 28, 2008.
- EPA. 2007. The Clean Air Act amendments of 1990 list of hazardous air pollutants. U.S. Environmental Protection Agency. United States Code.42 USC 7412. <http://www.epa.gov/ttn/atw/orig189.html>. April 24, 2008.
- \*EPA. 2008a. Acute exposure guideline levels (AEGLs). Second AEGL Chemical Priority List. Washington, DC: U.S. Environmental Protection Agency, Office of Pollution Prevention and Toxics. [http://www.epa.gov/oppt/aegl/pubs/priority\\_2.htm](http://www.epa.gov/oppt/aegl/pubs/priority_2.htm). April 24, 2008.
- EPA. 2008b. Designation of hazardous substances. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 116.4. <http://www.epa.gov/lawsregs/search/40cfr.html>. April 24, 2008.
- EPA. 2008c. Determination of reportable quantities. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 117.3. <http://www.epa.gov/lawsregs/search/40cfr.html>. April 24, 2008.
- EPA. 2008d. Groundwater monitoring list. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 264, Appendix IX. <http://www.epa.gov/lawsregs/search/40cfr.html>. May 05, 2008.
- EPA. 2008e. Designation of hazardous substances. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 302.4 <http://www.epa.gov/lawsregs/search/40cfr.html>.
- EPA. 2008f. The list of extremely hazardous substances and their threshold planning quantities. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 355, Appendix A. <http://www.epa.gov/lawsregs/search/40cfr.html>. April 24, 2008.
- EPA. 2008g. Toxic chemical release reporting. Chemicals and chemical categories to which this part applies. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 372.65. <http://www.epa.gov/lawsregs/search/40cfr.html>. April 24, 2008.

## 9. REFERENCES

- EPA. 2008h. Toxic pollutants. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 401.15. <http://www.epa.gov/lawsregs/search/40cfr.html>. April 24, 2008.
- EPA. 2009a. Targeted national sewage sludge survey sampling and analysis technical report. Washington, DC: U.S. Environmental Protection Agency. [http://water.epa.gov/scitech/wastetech/biosolids/upload/2009\\_01\\_15\\_biosolids\\_tnsss-tech.pdf](http://water.epa.gov/scitech/wastetech/biosolids/upload/2009_01_15_biosolids_tnsss-tech.pdf). September 10, 2012.
- EPA. 2009b. National primary drinking water regulations. U.S. Environmental Protection Agency, Office of Ground Water. EPA816F090004. <http://water.epa.gov/drink/contaminants/upload/mcl-2.pdf>. February 22, 2012.
- EPA. 2011. Pollutant limits. U.S. Environmental Protection Agency. Code of Federal Regulations 40 CFR 503.13 <http://www.gpo.gov/fdsys/pkg/CFR-2011-title40-vol30/pdf/CFR-2011-title40-vol30-part503.pdf>. September 10, 2012.
- EPA. 2011b. 2011 Edition of the drinking water standards and health advisories. Washington, DC: U.S. Environmental Protection Agency, Office of Water. EPA822R06013. PB2007101258. <http://www.epa.gov/waterscience/criteria/drinking/dwstandards.pdf>. February 22, 2012.
- Epstein SS, Arnold E, Andrea J, et al. 1972. Detection of chemical mutagens by the dominant lethal assay in the mouse. *Toxicol Appl Pharmacol* 23:288-325.
- Espinosa Almendro JM, Ojeda CB, de Torres AG, et al. 1992. Determination of cadmium in biological samples by inductively coupled plasma atomic emission spectrometry after extraction with 1,5-bis(di-2-pyridylmethylene) thiocarbonohydrazide. *Analyst* 117(11):1749-1751.
- Eum, KD; Lee, MS; Paek, D. 2008. Cadmium in blood and hypertension. *Sci Total Environ* 407(1):147-153.
- European Chemicals Bureau. 2007. European union risk assessment report. Cadmium metal and cadmium oxide. Luxembourg: European Chemicals Bureau, Institute for Health and Consumer Protection.
- \*Evans J, Hastings L. 1992. Accumulation of Cd(II) in the CNS depending on the route of administration: Intraperitoneal, intratracheal, or intranasal. *Fundam Appl Toxicol* 19:275-278.
- Everett CJ, Frithsen IL. 2008. Association of urinary cadmium and myocardial infarction. *Environ Res* 106(2):284-286.
- Ewers U, Brockhaus A, Dolgner R, et al. 1985. Environmental exposure to cadmium and renal function of elderly women living in cadmium-polluted areas of the Federal Republic of Germany. *Int Arch Occup Environ Health* 55:217-239.
- Exon JH, Koller LD, Kerkvliet NI. 1986. Tissue residues, pathology- and viral-induced mortality in mice chronically exposed to different cadmium salts. *J Environ Pathol Toxicol Oncol* 7:109-114.
- Eybl V, Kotyzova D, Koutensky J, et al. 1994. Effect of chelators, monoisoamyl meso-2,3-dimercaptosuccinate and N-(4-methylbenzyl)-4-0-(B-D-galactopyranosyl)-D-glucamine-N-carbodithioate, on cadmium and essential element levels in mice. *Analyst* 120:855-857.

## 9. REFERENCES

- Ezaki T, Tsukahara T, Moriguchi J, et al. 2003. No clear-cut evidence for cadmium-induced renal tubular dysfunction among over 10,000 women in the Japanese general population: A nationwide large-scale survey. *Int Arch Occup Environ Health* 76(3):186-196.
- \*Fagher U, Laudanski T, Schutz A, et al. 1993. The relationship between cadmium and lead burdens and preterm labor. *Int J Gynaecol Obstet* 40(22):109-114.
- Fahmy MA, Aly FA. 2000. *In vivo* and *in vitro* studies on the genotoxicity of cadmium chloride in mice. *J Appl Toxicol* 20(3):231-238.
- Falck FY, Fine LJ, Smith RG, et al. 1983. Occupational cadmium exposure and renal status. *Am J Ind Med* 4:541-549.
- Farnsworth M. 1980. Cadmium chemicals. 1st ed. New York, NY: International Lead Zinc Research Organization, Inc.
- Fatur T, Tusek M, Falnoga I, et al. 2002. DNA damage and metallothionein synthesis in human hepatoma cells (HepG2) exposed to cadmium. *Food Chem Toxicol* 40(8):1069-1076.
- \*Favino A, Candura F, Chiappino G, et al. 1968. Study on the androgen function of men exposed to cadmium. *Med Lav* 59:105-110.
- FDA. 2007. Beverages. Bottled water. U.S. Food and Drug Administration. Code of Federal Regulations. 21 CFR 165.110. <http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm>. April 24, 2008.
- FDA. 2008. EAFUS: A food additive database. U.S. Food and Drug Administration. <http://vm.cfsan.fda.gov/~dms/eafus.html>. April 24, 2008.
- FDA. 2010. Total diet study statistics on elemental results. Market baskets 2006-1 through 2008-4. College Park, MD: U.S. Food and Drug Administration. <http://www.fda.gov/downloads/Food/FoodSafety/FoodContaminantsAdulteration/TotalDietStudy/UCM184301.pdf>. February 22, 2012.
- FEDRIP. 2008. Cadmium. Federal Research in Progress database. Springfield, VA: National Technical Information Service. April 27, 2008.
- FEDRIP. 2012. Cadmium. Federal Research in Progress database. Springfield, VA: National Technical Information Service. September 2012.
- Feijtel TC, Delne RD, Patrick WH Jr. 1988. Biogeochemical control on metal distribution and accumulation in Louisiana sediments. *J Environ Qual* 17:88-94.
- Ferraro PM, Costanzi S, Naticchia A, et al. 2010. Low level exposure to cadmium increases the risk of chronic kidney disease: Analysis of the NHANES 1999-2006. *BMC Public Health* 10:304.
- Filipic M, Hei TK. 2004. Mutagenicity of cadmium in mammalian cells: Implication of oxidative DNA damage. *Mutat Res* 546(1-2):81-91.
- Fingerle H, Fischer G, Classen HG. 1982. Failure to produce hypertension in rats by chronic exposure to cadmium. *Food Chem Toxicol* 20:301-306.

## 9. REFERENCES

- Flanagan PR, McLellan J, Haist J, et al. 1978. Increased dietary cadmium absorption in mice and human subjects with iron deficiency. *Gastroenterology* 74:841-846.
- Fomon SJ. 1966. Body composition of the infant. Part I. The male reference infant. In: Falkner F, ed. *Human development*. Philadelphia, PA: WB Saunders, 239-246.
- Fomon SJ, Haschke F, Ziegler EE, et al. 1982. Body composition of reference children from birth to age 10 years. *Am J Clin Nutr* 35:1169-1175.
- Forbes GB, Bruining GJ. 1976. Urinary creatinine excretion and lean body mass. *Am J Clin Nutr* 29:1359-1366.
- Forrester JW. 1968. *Principles of systems*. Cambridge: Wright-Allen Press.
- Foulkes EC. 1978. Renal tubular transport of cadmium-metallothionein. *Toxicol Appl Pharmacol* 45:505-512.
- Foulkes EC. 1980. Some determinants of intestinal cadmium transport in the rat. *J Environ Pathol Toxicol* 3:471-481.
- Foulkes EC. 1984. Intestinal absorption of heavy metals. In: Csaky TZ, ed. *Handbook of experimental pharmacology*. Vol. 70/I. Pharmacology of intestinal permeation. Berlin: Springer Verlag, 543-565.
- Foulkes EC. 1985. Interactions between metals in rat jejunum: Implications on the nature of cadmium uptake. *Toxicology* 37:117-125.
- Foulkes EC. 1989. On the mechanism of cellular cadmium uptake. *Biol Trace Element Res* 21:195-200.
- Foulkes EC, Blanck S. 1990. Acute cadmium uptake by rabbit kidneys: Mechanism and effects. *Toxicol Appl Pharmacol* 102:464-473.
- \*Foulkes EC, McMullen DM. 1986. Endogenous metallothionein as determinant of intestinal cadmium absorption: A reevaluation. *Toxicology* 38:285-291.
- Foulkes EC, Voner C. 1981. Effects of Zn status, bile and other endogenous factors on jejunal Cd absorption. *Toxicology* 22:115-122.
- Fox MR, Jacobs RM, Jones AO, et al. 1979. Effects of nutritional factors on metabolism of dietary cadmium at levels similar to those of man. *Environ Health Perspect* 28:107-114.
- Frant S, Kleeman I. 1941. Cadmium "food-poisoning." *JAMA* 117:86-89.
- Frazier J. 1994. Need for physiologically based toxicokinetic models in estimating target organ dosage following oral ingestion of cadmium. In: Wang RGM, ed. *Water contamination and health*. New York, NY: Marcel Dekker, Inc., 281-304.
- Frery N, Girard F, Moreau T, et al. 1993. Validity of hair cadmium in detecting chronic cadmium exposure in general populations. *Bull Environ Contam Toxicol* 50:736-743.

## 9. REFERENCES

- Friberg L. 1950. Health hazards in the manufacture of alkaline accumulators with special reference to chronic cadmium poisoning. *Acta Med Scand* 138(Suppl 240):1-124.
- Friberg L, Piscator M, Nordberg GF, et al., eds. 1974. *Cadmium in the environment*. 2nd ed. Boca Raton, FL: CRC Press, 23-91.
- Fu JY, Huang XS, Zhu XQ. 1999. Study on peripheral blood lymphocytes chromosome abnormality of people exposed to cadmium in environment. *Biomed Environ Sci* 12(1):15-19.
- Galal-Gorchev H. 1993. Dietary intake, levels in food and estimated intake of lead, cadmium and mercury. *Food Addit Contam* 10(1):115-128.
- Galicia-García V, Rojas-Lopez M, Rios C. 1995. Cadmium levels in maternal, cord and newborn blood in Mexico City newborns. *Toxicologist* 15(1):308.
- Galicia-García V, Rojas-Lopez M, Rojas R, et al. 1997. Cadmium levels in maternal, cord and newborn blood in Mexico City. *Toxicol Lett* 91(1):57-61.
- Gallagher CM, Kovach JS, Meliker JR. 2008. Urinary cadmium and osteoporosis in U.S. Women  $\geq 50$  years of age: NHANES 1988-1994 and 1999-2004. *Environ Health Perspect* 116(10):1338-1343.
- Gambrell RP. 1994. Trace and toxic metals in wetlands, a review. *J Environ Qual* 23:883-891.
- Gamo M, Ono K, Nakanishi J. 2006. Meta-analysis for deriving age- and gender-specific dose-response relationships between urinary cadmium concentration and  $\beta_2$ -microglobulinuria under environmental exposure. *Environ Res* 101(1):104-112.
- Gartrell MJ, Craun JC, Podrebarac DS, et al. 1986. Pesticides, selected elements, and other chemicals in adult total diet samples, October 1980 - March 1982. *J Assoc Off Anal Chem* 69:146-161.
- Gasiorek K, Bauchinger M. 1981. Chromosome changes in human lymphocytes after separate and combined treatment with divalent salts of lead, cadmium, and zinc. *Environ Mutagen* 3:513-518.
- Gatta A, Bazzlerla G, Amodio P, et al. 1989. Detection of the early steps of cadmium nephropathy-comparison of light- and electron-microscopical patterns with the urinary enzymes excretion: An experimental study. *Nephron* 51:20-24.
- Geiger H, Bahner U, Anderes S, et al. 1989. Cadmium and renal hypertension. *J Human Hypertension* 3:23-27.
- Gennart JP, Buchet JP, Roels H, et al. 1992. Fertility of male workers exposed to cadmium, lead, or manganese. *Am J Epidemiol* 135(11):1208-1219.
- Ghezzi I, Toffoletto F, Sesana G, et al. 1985. Behaviour of biological indicators of cadmium in relation to occupational exposure. *Int Arch Occup Environ Health* 55:133-140.
- Gibbs RJ. 1994. Metals in the sediments along the Hudson River estuary. *Environ Int* 20(4):507-516.
- \*Gill KD, Pal R, Nath R. 1989a. Effect of cadmium on lipid peroxidation and antioxidant enzymes in undernourished weanling rat brain. *Pharmacol Toxicol* 65:73-77.

## 9. REFERENCES

- Gill KD, Pal R, Sandhir R, et al. 1989b. Effect of chronic cadmium exposure on lipid composition and peroxidation in liver and kidneys in rats. *Med Sci Res* 17:921-924.
- Gilliavod N, Leonard A. 1975. Mutagenicity tests with cadmium in the mouse. *Toxicology* 5:43-47.
- Girolami JP, Bascands JL, Pecher C, et al. 1989. Renal kallikrein excretion as a distal nephrotoxicity marker during cadmium exposure in rats. *Toxicology* 55:117-129.
- Giwercman A, Carlsen E, Keiding N, et al. 1993. Evidence for increasing incidence of abnormalities of the human testis: A review. *Environ Health Perspect Suppl* 101(2):65-71.
- Glaser U, Hochrainer D, Otto FJ, et al. 1990. Carcinogenicity and toxicity of four cadmium compounds inhaled by rats. *Toxicol Environ Chem* 27:153-162.
- Glaser U, Kloppel H, Hochrainer D. 1986. Bioavailability indicators of inhaled cadmium compounds. *Ecotoxicol Environ Saf* 11:261-271.
- \*Glaser SC, Bezlo CT, Glauser EM. 1976. Blood-cadmium levels in normotensive and untreated hypertensive humans. *Lancet* 1:717-718.
- Gochfeld M, Burger J. 1982. Biological concentrations of cadmium in estuarine birds of the New York Bight. *Colonial Waterbirds* 5:116-123.
- Goering PL, Klaassen CD. 1984a. Resistance to cadmium-induced hepatotoxicity in immature rats. *Toxicol Appl Pharmacol* 74:321-329.
- Goering PL, Klaassen CD. 1984b. Tolerance to cadmium-induced hepatotoxicity following cadmium pretreatment. *Toxicol Appl Pharmacol* 74:308-313.
- Goering PL, Klaassen CD. 1984c. Zinc-induced tolerance to cadmium hepatotoxicity. *Toxicol Appl Pharmacol* 74:299-307.
- Goering PL, Klaassen CD. 1985. Mechanism of manganese-induced tolerance to cadmium lethality and hepatotoxicity. *Biochem Pharmacol* 34:1371-1379.
- Goldfrank LR, Flomenbaum NE, Lewin NA, et al. 1990. *Goldfrank's toxicologic emergencies*. 4th ed. Norwalk, CT: Appleton & Lange, 649-652.
- Gompertz D, Chettle DR, Fletcher JG, et al. 1983. Renal dysfunction in cadmium smelters: Relation to *in vivo* liver and kidney cadmium concentrations. *Lancet* 1:1185-1187.
- Goon D, Klaassen CD. 1989. Dosage-dependent absorption of cadmium in the rat intestine measured *in situ*. *Toxicol Appl Pharmacol* 100:41-50.
- Goyer RA, Cherian MG. 1992. Role of metallothionein in human placenta and rats exposed to cadmium. In: Nordberg GF, Herber RFM, Alessio L, eds. *Cadmium in the Human Environment: Toxicity and Carcinogenicity*. Lyon: International Agency for Research on Cancer, 239-247.
- Goyer RA, Miller CR, Zhu SY, et al. 1989. Non-metlothionein-bound cadmium in the pathogenesis of cadmium nephrotoxicity in the rat. *Toxicol Appl Pharmacol* 101:232-244.

## 9. REFERENCES

- Graham JA, Miller FJ, Daniels MJ, et al. 1978. Influence of cadmium, nickel, and chromium on primary immunity in mice. *Environ Res* 16:77-87.
- Greenberg RR, Gallorini M, Gills TE. 1979. Cadmium analysis by radiochemical neutron activation analysis. *Environ Health Perspect* 28:1-4.
- Greenspan BJ, Morrow PE, Ferin J. 1988. Effects of aerosol exposures to cadmium chloride on the clearance of titanium dioxide from the lungs of rats. *Exp Lung Res* 14:491-500.
- Grose EC, Richards JH, Jaskot RH, et al. 1987. A comparative study of the effects of inhaled cadmium chloride and cadmium oxide: Pulmonary response. *J Toxicol Environ Health* 21:219-232.
- Gross SB, Yeager DW, Middendorf MS. 1976. Cadmium in liver, kidney, and hair of humans, fetal through old age. *J Toxicol Environ Health* 2:153-167.
- Groten JP, Sinkeldam EJ, Luten JB, et al. 1990. Comparison of the toxicity of inorganic and liver-incorporated cadmium: A 4-week feeding study in rats. *Food Chem Toxicol* 28:435-441.
- Gruden N, Matausic S. 1989. Some factors influencing cadmium-manganese interaction in adult rats. *Bull Environ Contam Toxicol* 43:101-106.
- Guillard O, Lauwerys R. 1989. *In vitro* and *in vivo* effect of mercury, lead, and cadmium on the generation of chemiluminescence by human whole blood. *Biochem Pharmacol* 38:2819-2824.
- Gunn SA, Gould TC, Anderson WAD. 1968a. Mechanisms of zinc, cysteine and selenium protection against cadmium-induced vascular injury to mouse testis. *J Reprod Fertil* 15:65-70.
- Gunn SA, Gould TC, Anderson WAD. 1968b. Selectivity of organ response to cadmium and various protective measures. *J Pathol Bacteriol* 96:89-96.
- Gupta A, Gupta A, Murthy RC, et al. 1993. Neurochemical changes in developing rat brain after pre- and postnatal cadmium exposure. *Bull Environ Contam Toxicol* 51:12-17.
- Gutenmann WH, Rutzke M, Kuntz HT, et al. 1994. Elements and polychlorinated biphenyls in sewage sludges of large cities in the United States. *Chemosphere* 28(4):725-728.
- Guzelian PS, Henry CJ, Olin SS, eds. 1992. Similarities and differences between children and adults: Implications for risk assessment. Washington, DC: International Life Sciences Institute Press.
- Haddad LM, Winchester JF. 1990. Clinical management of poisoning and drug overdose. 2nd ed. Philadelphia, PA: WB Sanders Company, 331-332, 1029-1030.
- Hammer DI, Calocci AV, Hasselblad V, et al. 1973. Cadmium and lead in autopsy tissues. *J Occup Med* 15:956-964.
- Handy RD. 1992a. The assessment of episodic metal pollution. I. Uses and limitations of tissue contaminant analysis in rainbow trout (*Oncorhynchus mykiss*) after short waterborne exposure to cadmium or copper. *Arch Environ Contam Toxicol* 22(1):74-81.

## 9. REFERENCES

- Handy RD. 1992b. The assessment of episodic metal pollution. II. The effects of cadmium and copper enriched diets on tissue contaminant analysis in rainbow trout (*Oncorhynchus mykiss*). Arch Environ Contam Toxicol 22(1):82-87.
- Hansen JC, Wulf HC, Kromann N, et al. 1985. Cadmium concentrations in blood samples from an East Greenlandic population. Dan Med Bull 32:277-279.
- Hardell L, Wing MA, Ljungberg B, et al. 1994. Levels of cadmium, zinc and copper in renal cell carcinoma and normal kidney. Eur J Cancer Prev 3:45-48.
- Harrison SE, Klaverkamp JF. 1990. Metal contamination in liver and muscle of northern pike (*Esox lucius*) and white sucker (*Catostomus commersoni*) and in sediments from lakes near the smelter at Flin Flon, Manitoba. Environ Toxicol Chem 9:941-956.
- Hart BA. 1986. Cellular and biochemical response of the rat lung to repeated inhalation of cadmium. Toxicol Appl Pharmacol 82:281-291.
- Hart BA, Potts RJ, Watkin RD. 2001. Cadmium adaptation in the lung – a double-edged sword? Toxicology 160(1-3):65-70.
- Hart BA, Voss GW, Willean CL. 1989a. Pulmonary tolerance to cadmium following cadmium aerosol pretreatment. Toxicol Appl Pharmacol 101:447-460.
- Hart RP, Rose CS, Hamer RM. 1989b. Neuropsychological effects of occupational exposure to cadmium. J Clin Exper Neuropsychol 11:933-943.
- Hasselbach L, Ver Hoef JM, Ford J, et al. 2005. Spatial patterns of cadmium and lead deposition on and adjacent to National Park Service lands in the vicinity of Red Dog Mine, Alaska. Sci Total Environ 348(1-3):223-229.
- Haswell-Elkins M, Satarug S, O'Rourke P, et al. 2008. Striking association between urinary cadmium level and albuminuria among Torres Strait Islander people with diabetes. Environ Res 106:379-383.
- Hayano M, Nogawa K, Kido T, et al. 1996. Dose-response relationship between urinary cadmium concentration and  $\beta_2$ -microglobulinuria using logistic regression analysis. Arch Environ Health 51(2):162-167.
- Hays ES, Margaretten N. 1985. Long-term oral cadmium produces bone marrow hypoplasia in mice. Exp Hematol 13:229-234.
- HazDat. 2007. Cadmium. HazDat Database: ATSDR's Hazardous Substance Release and Health Effects Database. Atlanta, GA: Agency for Toxic Substances and Disease Registry.
- He QB, Singh BR. 1994. Crop uptake of cadmium from phosphorus fertilizers. I. Yield and cadmium content. Water Air Soil Pollut 74:251-265.
- Heinrich U, Peters L, Ernst H, et al. 1989. Investigation on the carcinogenic effects of various cadmium compounds after inhalation exposure in hamsters and mice. Exp Pathol 37:253-258.
- Hellström L, Elinder CG, Dahlberg B, et al. 2001. Cadmium exposure and end-stage renal disease. Am J Kidney Dis 38(5): 1001-1008.

## 9. REFERENCES

- Henderson RF, Rebar AH, Pickrell JA, et al. 1979. Early damage indicators in the lung. III. Biochemical and cytological response of the lung to inhaled metal salts. *Toxicol Appl Pharmacol* 50:123-136.
- Herrero TC, Martin LFL. 1993. Evaluation of cadmium levels in fertilized soils. *Bull Environ Contam Toxicol* 50:61-68.
- Herron N. 2003. Cadmium compounds. *Kirk-Othmer encyclopedia of chemical technology*. Vol. 4. John Wiley & Sons, Inc., 507-523.  
<http://mrw.interscience.wiley.com/emrw/9780471238966/kirk/article/cadmherr.a01/current/pdf>. April 29, 2008.
- \*Hew KW, Ericson WA, Welsh MJ. 1993a. A single low cadmium dose causes failure of spermiation in the rat. *Toxicol Appl Pharmacol* 121(1):15-21.
- \*Hew KW, Heath GL, Jiwa AH, et al. 1993b. Cadmium in vivo causes disruption of tight junction-associated microfilaments in rat Sertoli cells. *Biol Reprod* 49(4):840-849.
- Hirano S, Tsukamoto N, Higo S, et al. 1989a. Toxicity of cadmium oxide instilled into the rat lung. II. Inflammatory in broncho-alveolar lavage fluid. *Toxicology* 55(1-2):25-35.
- Hirano S, Tsukamoto N, Kobayashi E, et al. 1989b. Toxicity of cadmium oxide instilled into the rat lung. I. Metabolism of cadmium oxide in the lung and its effects on essential elements. *Toxicology* 55(1-2):15-24.
- \*Hirano S, Tsukamoto N, Suzuki KT. 1990. Biochemical changes in the rat lung and liver following intratracheal instillation of cadmium oxide. *Toxicol Lett* 50:97-105.
- Hiratsuka H, Satoh S-i, Satoh M, et al. 1999. Tissue distribution of cadmium in rats given minimum amounts of cadmium-polluted rice or cadmium chloride for 8 months. *Toxicol Appl Pharmacol* 160:183-191.
- Hoadley JE, Cousins RJ. 1985. Effects of dietary zinc depletion and food restriction on intestinal transport of cadmium in the rat. *Proc Soc Exp Biol Med* 180:296-302.
- Hochi Y, Kido T, Nogawa K, et al. 1995. Dose-response relationship between total cadmium intake and prevalence of renal dysfunction using general linear models. *J Appl Toxicol* 15:109-116.
- Hoel DG, Davis DL, Miller AB, et al. 1992. Trends in cancer mortality in 15 industrialized countries, 1969-1986. *J Natl Cancer Inst* 84(5):313-320.
- \*Hoffmann L, Putzke HP, Kampehl HJ, et al. 1985. Carcinogenic effects of cadmium on the prostate of the rat. *J Cancer Res Clin Oncol* 109:193-199.
- \*Holloway WR, Thor DH. 1988a. Cadmium exposure in infancy: Effects on activity and social behaviors of juvenile rats. *Neurotoxicol Teratol* 10:135-142.
- \*Holloway WR, Thor DH. 1988b. Social memory deficits in adult male rats exposed to cadmium in infancy. *Neurotoxicol Teratol* 10:193-197.

## 9. REFERENCES

- Holmgren GGS, Meyer MW, Chaney RL, et al. 1993. Cadmium, lead, zinc, copper, and nickel in agricultural soils of the United States of America. *J Environ Qual* 22:335-348.
- Holsen TM, Noll KE, Fang G, et al. 1993. Dry deposition and particle size distributions measured during the Lake Michigan Urban Air Toxics Study. *Environ Sci Technol* 27(7):1327-1333.
- Holt D, Webb M. 1987. Teratogenicity of ionic cadmium in the Wistar rat. *Arch Toxicol* 59:443-447.
- Honda R, Swaddiwudhipong W, Nishijo M, et al. 2010. Cadmium induced renal dysfunction among residents of rice farming area downstream from a zinc-mineralized belt in Thailand. *Toxicol Lett* 198(1):26-32.
- Honma M, Hayashi M, Shimada H, et al. 1999. Evaluation of the mouse lymphoma tk assay (microwell method) as an alternative to the *in vitro* chromosomal aberration test. *Mutagenesis* 14(1):5-22.
- Hopf G, Bocker R, Bischoff, et al. 1990. Investigation of the combined effects of ethanol and cadmium on rat liver and kidneys. *Arch Toxicol* 64:470-473.
- Horiguchi H, Aoshima K, Oguma E, et al. 2010. Latest status of cadmium accumulation and its effects on kidneys, bone, and erythropoiesis in inhabitants of the formerly cadmium-polluted Jinzu River Basin in Toyama, Japan, after restoration of rice paddies. *Int Arch Occup Environ Health* 83(8):953-970.
- Horiguchi H, Oguma E, Sasaki S, et al. 2004. Comprehensive study of the effects of age, iron deficiency, diabetes mellitus, and cadmium burden on dietary cadmium absorption in cadmium-exposed female Japanese farmers. *Toxicol Appl Pharmacol* 196:114-123.
- Hotz P, Buchet JP, Bernard A, et al. 1999. Renal effects of low-level environmental cadmium exposure: 5-year follow-up of a subcohort from the Cadmibel study. *Lancet* 354:1508-1513.
- HSDB. 2008. Cadmium and cadmium compounds. Hazardous Substance Data Bank. National Library of Medicine, Bethesda, MD. May 28, 2008.
- Huel G, Everson RB, Menger I. 1984. Increased hair cadmium in newborns of women occupationally exposed to heavy metals. *Environ Res* 35:115-121.
- Huel G, Ibrahim MA, Boudene C. 1981. Cadmium and lead content of maternal and newborn hair: Relationship to parity, birth weight, and hypertension. *Arch Environ Health* 36:221-227.
- Hwangbo Y, Weaver VM, Tellez-Plaza M, et al. 2011. Blood cadmium and estimated glomerular filtration rate in Korean adults. *Environ Health Perspect* 119:1800-1805.
- IARC. 1993. Cadmium and certain cadmium compounds. In: IARC monographs on the evaluation of the carcinogenic risk of chemicals to humans. Beryllium, cadmium, mercury and exposures in the glass manufacturing industry. IARC monographs, Vol. 58. Lyon, France: World Health Organization. International Agency for Research on Cancer, 119-236.
- IARC. 2008. Agents reviewed by the IARC monographs: Volumes 1-99. Lyon, France: International Agency for Research on Cancer. <http://monographs.iarc.fr/ENG/Classification/index.php>. April 24, 2008.

## 9. REFERENCES

- ICRP. 1980. Metabolic data for cadmium. Limits for intakes of radionuclides by workers. Protection Pergamon Press, NY: International Commission on Radiological, 42-44. ICRP Publication No. 30, Part 2.
- ICRP. 1981. Report of the task group on reference man. Pergamon Press, NY: International Commission on Radiological Protection, 40-45. ICRP Publication 23.
- ICRP. 1994. Human respiratory tract model for radiological protection. Pergamon Press, Oxford: International Commission on Radiological Protection. ICRP publication 66.
- Iimura K. 1981. Heavy metal problems in paddy soils. In: Kitagishi K, Yamane I, eds. Heavy metal problems in soils of Japan. Japan Scientific Societies Press, 37-50.
- IJC. 1989. 1989 report on Great Lakes water quality. Windsor, Ontario: International Joint Commission, Great Lakes Water Quality Board.
- \*Ijomah G, Corrigan FM, Holliday J, et al. 1993. Aluminum, cadmium, lipids and prevalence of dementia in people living near an aluminum smelter. Trace Elements in Medicine 10(1):6-12.
- Ikeda M, Ezaki T, Tsukahara T, et al. 2005a. Reproducibility of urinary cadmium,  $\alpha$ -microglobulin, and  $\beta_2$ -microglobulin levels in health screening of the general population. Arch Environ Contam Toxicol 48(1):135-140.
- Ikeda M, Ezaki T, Moriguchi J, et al. 2005b. The threshold cadmium level that causes a substantial increase in  $\beta_2$ -microglobulin in urine of general populations. Tohoku J Exp Med 205(3):247-261.
- Ikeda M, Ezaki T, Tsukahara T, et al. 2003a. Bias induced by the use of creatinine-corrected values in evaluation of  $\beta_2$ -microglobulin levels. Toxicol Lett 145:197-207.
- Ikeda M, Ezaki T, Tsukahara T, et al. 2003b. Threshold levels of urinary cadmium in relation to increases in urinary  $\beta_2$ -microglobulin among general Japanese populations. Toxicol Lett 137(3):135-141.
- Ikeda M, Watanabe T, Zhang ZW, et al. 1997. The integrity of the liver among people environmentally exposed to cadmium at various levels. Int Arch Occup Environ Health 69(6):379-385.
- Ikeda M, Zhang ZW, Higashikawa K, et al. 1999. Background exposure of general women populations in Japan to cadmium in the environment and possible health effects. Toxicol Lett 108(2-3):161-166.
- Ikeda M, Zhang ZW, Moon CS, et al. 2000. Normal liver function in women in the general Japanese population subjected to environmental exposure to cadmium at various levels. Int Arch Occup Environ Health 73(2):86-90.
- ILZRO. 1977. Biological availability of cadmium from cadmium pigments. New York, NY: International Lead Zinc Research Organization, Inc.
- Inoue Y, Watanabe TK. 1978. Toxicity and mutagenicity of cadmium and furylfuramide in *Drosophila melanogaster*. Jpn J Genetics 53:183-189.
- Inskip H, Beral V, McDowall M. 1982. Mortality of Shipham residents: 40-year follow-up. Lancet:896-899.

## 9. REFERENCES

- IRIS. 2012. Cadmium. Integrated Risk Information System. Washington, DC: U.S. Environmental Protection Agency. <http://www.epa.gov/iris/subst/index.html>. February 22, 2012.
- Ishizaki M, Kido T, Honda R, et al. 1989. Dose-response relationship between urinary cadmium and  $\beta_2$ -microglobulin in Japanese environmentally cadmium exposed population. *Toxicology* 58:121-131.
- Itoh H, Iwasaki M, Nakajima Y, et al. 2008. A case-control study of the association between urinary cadmium concentration and endometriosis in infertile Japanese women. *Sci Total Environ* 402(2-3):171-175.
- Itokawa Y, Abe T, Tabei R, et al. 1974. Renal and skeletal lesions in experimental cadmium poisoning. *Arch Environ Health* 28:149-154.
- Iwata K, Katoh T, Morikawa Y, et al. 1988. Urinary trehalase activity as an indicator of kidney injury due to environmental cadmium exposure. *Arch Toxicol* 62:435-439.
- Iwata K, Saito H, Moriyama M, et al. 1993. Renal tubular function after reduction of environmental cadmium exposure: A ten-year follow-up. *Arch Environ Health* 48(3):157-163.
- Iwata K, Saito H, Moriyama M, et al. 1991a. Association between renal tubular dysfunction and mortality among residents in a cadmium-polluted area, Nagasaki, Japan. *Tohoku J Exp Med* 164:93-102.
- Iwata K, Saito H, Nakano A. 1991b. Association between cadmium-induced renal dysfunction and mortality: Further evidence. *Tohoku J Exp Med* 164:319-330.
- \*Iwata K, Saito H, Moriyama M, et al. 1992. Follow up study of renal tubular dysfunction and mortality in residents of an area polluted with cadmium. *Br J Ind Med* 49(10):737-737.
- Izuno T, Sugita M, Arita S, et al. 2000. Validity of cadmium concentration in rice as the 'dose' of the dose-response relationship between cadmium intake and renal dysfunction. *Environ Res* 84 Sect A:275-281.
- Jackson LW, Zullo MD, Goldberg JM. 2008. The association between heavy metals, endometriosis and uterine myomas among premenopausal women: National Health and Nutrition Examination Survey 1999-2002. *Hum Reprod* 23(3):679-687.
- Jacquillet G, Barbier O, Rubera I, et al. 2007. Cadmium causes delayed effects on renal function in the offspring of cadmium-contaminated pregnant female rats. *Am J Physiol Renal Physiol* 293(5):F1450-1460.
- Jaeger DE. 1990. Absorption interactions of zinc and cadmium in the isolated perfused rat intestine. *J Trace Elements Electrolytes Health Disease* 4:101-105.
- \*Jahn F, Klinger W. 1989. Influence of prenatal administration of cadmium on postnatal development and inducibility of hepatic monooxygenases in rats. *Pharmacol Toxicol* 64:291-292.
- Jakubowski M, Razniewska G, Halatek T, et al. 1992. Integrated index of occupational exposure to cadmium as a predictor of kidney dysfunction. *Cadmium in the human environment: Toxicity and carcinogenicity*. IARC Sci Publ 118:319-324.

## 9. REFERENCES

- Jakubowski M, Trojanowska B, Kowalska G, et al. 1987. Occupational exposure to cadmium and kidney dysfunction. *Int Arch Occup Environ Health* 59:567-577.
- Jamall IS, Smith JC. 1985a. Effects of cadmium on glutathione peroxidase, superoxide dismutase and lipid peroxidation in the rat heart: A possible mechanism of cadmium cardiotoxicity. *Toxicol Appl Pharmacol* 80:33-42.
- Jamall IS, Smith JC. 1985b. The effects of dietary selenium on cadmium binding in rat kidney and liver. *Arch Toxicol* 56:252-255.
- Jamall IS, Smith JC. 1985c. Effects of cadmium treatment on selenium dependent and selenium independent glutathione peroxidase activities and lipid peroxidation in the kidney and liver of rats maintained on various levels of dietary selenium. *Arch Toxicol* 58:102-105.
- Jamall IS, Naik M, Sprowls JJ, et al. 1989. A comparison of the effects of dietary cadmium on heart and kidney oxidant enzymes: Evidence for the greater vulnerability of the heart to cadmium toxicity. *J Appl Toxicol* 9:339-345.
- \*Janecki A, Jakubowiak A, Steinberger A. 1992. Effect of cadmium chloride on transepithelial electrical resistance of Sertoli cell monolayers in two-compartment cultures--a new model for toxicological investigations of the "blood-testis" barrier *in vitro*. *Toxicol Appl Pharmacol* 112(1):51-57.
- Jarrett JM, Xiao G, Caldwell KL, et al. 2008. Eliminating molybdenum oxide interference in urine cadmium biomonitoring using ICP-DRC-MS. *J Anal Atom Spectrom* 23(7):962-967.
- Järup L, Elinder CG. 1993. Incidence of renal stones among cadmium exposed battery workers. *Br J Ind Med* 50:598-602.
- Järup L, Elinder CG. 1994. Dose-response relations between urinary cadmium and tubular proteinuria in cadmium-exposed workers. *Am J Ind Med* 26(6):759-769.
- Järup L, Bellander T, Hogstedt C, et al. 1998a. Mortality and cancer incidence in Swedish battery workers exposed to cadmium and nickel. *Occup Environ Med* 55(11):755-759.
- Järup L, Berglund M, Elinder CG, et al. 1998b. Health effects of cadmium exposure - a review of the literature and a risk estimate. *Scand J Work Environ Health* 24:1-52.
- Järup L, Carlsson MD, Elinder CG, et al. 1995a. Enzymuria in a population living near a cadmium battery plant. *Occup Environ Med* 52:770-772.
- Järup L, Elinder CG, Spang G. 1988. Cumulative blood-cadmium and tubular proteinuria: A dose-response relationship. *Int Arch Occup Environ Health* 60:223-229.
- Järup L, Hellstrom L, Alfven T, et al. 2000. Low level exposure to cadmium and early kidney damage: The OSCAR study. *Occup Environ Med* 57(10):668-672.
- \*Järup L, Persson B, Edling C, et al. 1993. Renal function impairment in workers previously exposed to cadmium. *Nephron* 64:75-81.
- Järup L, Persson B, Elinder CG. 1995b. Decreased glomerular filtration rate in solderers exposed to cadmium. *Occup Environ Med* 52:818-822.

## 9. REFERENCES

- \*Jaw S, Jeffery EH. 1988. The effect of dietary zinc status on biliary metal excretion of rats. *J Nutr* 118:1385-1390.
- Jeng SL, Lee SJ, Lin SY. 1994. Determination of cadmium and lead in raw milk by graphite furnace atomic absorption spectrophotometer. *J Dairy Sci* 77:945-949.
- Jensen AA. 1983. Chemical contaminants in human milk. *Residue Reviews* 89:1-128.
- Jianhua Z, Lian X, Shuanlai Z, et al. 2006. DNA lesion and Hprt mutant frequency in rat lymphocytes and V79 Chinese hamster lung cells exposed to cadmium. *J Occup Health* 48(2):93-99.
- Jin T, Nordberg M, Frech W, et al. 2002. Cadmium biomonitoring and renal dysfunction among a population environmentally exposed to cadmium from smelting in China. *Biomaterials* 15:397-410.
- Jin T, Nordberg G, Xunwei W, et al. 1999. Urinary *N*-acetyl- $\beta$ -D-glucosaminidase isoenzymes as biomarker of renal dysfunction caused by cadmium in general population. *Environ Res* 81(2):167-173.
- Jin T, Kong Q, Ye T, et al. 2004a. Renal dysfunction of cadmium-exposed workers residing in a cadmium-polluted environment. *Biomaterials* 17(5):513-518.
- Jin T, Nordberg G, Ye T, et al. 2004c. Osteoporosis and renal dysfunction in a general population exposed to cadmium in China. *Environ Res* 96(3):353-359.
- Jin T, Wu X, Tang Y, et al. 2004b. Environmental epidemiological study and estimation of benchmark dose for renal dysfunction in a cadmium-polluted area in China. *Biomaterials* 17(5):525-530.
- Johanson CE. 1980. Permeability and vascularity of the developing brain: Cerebellum vs. cerebral cortex. *Brain Res* 190(1):3-16.
- Johansson A, Curstedt T, Robertson B, et al. 1984. Lung morphology and phospholipids after experimental inhalation of soluble cadmium, copper, and cobalt. *Environ Res* 34:295-309.
- John J, Gjessing ET, Grande M, et al. 1987. Influence of aquatic humus and pH on the uptake and depuration of cadmium by the Atlantic salmon (*Salmo salar L.*). *Sci Total Environ* 62:253-265.
- Jonah MM, Bhattacharyya MH. 1989. Early changes in the tissue distribution of cadmium after oral but not intravenous cadmium exposure. *Toxicology* 58:325-338.
- Jones MM, Cherian MG. 1990. The search for chelate antagonists for chronic cadmium intoxication. *Toxicology* 62:1-25.
- Jones MM, Singh PK, Basinger MA, et al. 1994. Cadmium mobilization by monoalkyl- and monoalkyl esters of meso-2,3-dimercaptosuccinic acid and by a dithiocarbamate. *Pharmacol Toxicol* 74:76-83.
- Jones MM, Singh PK, Gale GR, et al. 1992. Cadmium mobilization *in vivo* by intraperitoneal or oral administration of monoalkyl esters of meso-2,3-dimercaptosuccinic acid in the mouse. *Pharmacol Toxicol* 70:336-343.

## 9. REFERENCES

- Jurasović J, Cvitkovic P, Pizent A, et al. 2004. Semen quality and reproductive endocrine function with regard to blood cadmium in Croatian male subjects. *Biometals* 17(6):735-743.
- Kagamimori S, Watanabe M, Nakagawa H, et al. 1986. Case-control study on cardiovascular function in females with a history of heavy exposure to cadmium. *Bull Environ Contam Toxicol* 36:484-490.
- \*Kahan E, Derazne E, Rosenboim J, et al. 1992. Adverse health effects in workers exposed to cadmium. *Am J Ind Med* 21:527-537.
- Kalac P, Niznanska M, Bevilaqua D, et al. 1996. Concentrations of mercury, copper, cadmium and lead in fruiting bodies of edible mushrooms in the vicinity of a mercury smelter and a copper smelter. *Sci Total Environ* 177(1-3):251-258.
- Kalahasthi RB, Rajmohan H, Rajan B, et al. 2007. Urinary N-acetyl-beta -D-glucosaminidase and its isoenzymes A & B in workers exposed to cadmium at cadmium plating. *J Occup Med Toxicol* 2(5):1-7.
- Kamenosono T, Shimada H, Funakoshi T, et al. 2002a. Involvement of active transport systems in the mobilization of cadmium by dithiocarbamates *in vivo*. *Toxicology* 170(1-2):103-110.
- \*Kamenosono T, Shimada H, Funakoshi T, et al. 2002b. Structure-effect relationship in the mobilization of cadmium in mice by several dithiocarbamates. *Comp Biochem Physiol C* 132(1):61-66.
- Kanematsu N, Hara M, Kada T. 1980. Rec-assay and mutagenicity studies on metal compounds. *Mutat Res* 77:109-116.
- Kanisawa M, Schroeder HA. 1969. Life term studies on the effects of trace elements on spontaneous tumors in mice and rats. *Cancer Res* 29:892-895.
- Kaplan M, Atakan IH, Aydogdu N, et al. 2008. Influence of N-acetylcysteine on renal toxicity of cadmium in rats. *Pediatr Nephrol* 23(2):233-241.
- Kar AB, Das RP, Mukerji B. 1960. Prevention of cadmium induced changes in the gonads of rats by zinc and selenium-A study in antagonism between metals in the biological system. *Proc Natl Inst Sci India. Part B. Biol Sci* 26:40-50.
- Karakaya A, Yucesoy B, Sardas OS. 1994. An immunological study on workers occupationally exposed to cadmium. *Human Exp Toxicol* 13:73-75.
- Karmakar R, Banik S, Bandyopadhyay S, et al. 1998. Cadmium-induced alterations of hepatic lipid peroxidation, glutathione S-transferase activity and reduced glutathione level and their possible correlation with chromosomal aberration in mice: A time course study. *Mutat Res* 397(2):183-190.
- Kasuba V, Rozgaj R. 2002. Micronucleus distribution in human peripheral blood lymphocytes treated *in vitro* with cadmium chloride in G<sub>0</sub> and S phase of the cell cycle. *Chemosphere* 49(1):91-95.
- Kasuba V, Rozgaj R, Saric MM, et al. 2002. Evaluation of genotoxic damage of cadmium chloride in peripheral blood of suckling Wistar rats. *J Appl Toxicol* 22(4):271-277.
- Katskov DA, Schwrzer R, Pieter JJG, et al. 1994. Use of a furnace with a graphite filter for electrothermal atomic absorption spectrometry. *J Anal Atom Spectrom* 9:431-436.

## 9. REFERENCES

- Kawada T, Koyama H, Suzuki S. 1989. Cadmium, NAG activity, and B<sub>2</sub>-microglobulin in the urine of cadmium pigment workers. *Br J Ind Med* 46:52-55.
- Kawada T, Shinmyo RR, Suzuki S. 1992. Urinary cadmium and *N*-acetyl- $\beta$ -D-glucosaminidase excretion of inhabitants living in a cadmium-polluted area. *Int Arch Occup Environ Health* 63:541-546.
- Kawada T, Tohyama C, Suzuki S. 1990. Significance of the excretion of urinary indicator proteins for a low level of occupational exposure to cadmium. *Int Arch Occup Environ Health* 62:95-100.
- Kawamura J, Yoshida O, Nishino K, et al. 1978. Disturbances in kidney functions and calcium and phosphate metabolism in cadmium-poisoned rats. *Nephron* 20:101-110.
- \*Kawashima H, Nomiyama H, Nomiyama K. 1988. Chronic exposure to cadmium did not impair vitamin D metabolism in monkeys. *Environ Res* 46:48-58.
- Kazantzis G. 1979. Renal tubular dysfunction and abnormalities of calcium metabolism in cadmium workers. *Environ Health Perspect* 28:155-159.
- Kazantzis G, Blanks RG, Sullivan KR. 1992. Is cadmium a human carcinogen? In: Nordberg GF, Herber RFM, Alessio L, eds. *Cadmium in the human environment: Toxicity and carcinogenicity*. IARC Scientific Publications No. 118. Lyon, France: International Agency for Research on Cancer, 435-446.
- Kazantzis G, Lam TH, Sullivan KR. 1988. Mortality of cadmium-exposed workers. A five-year update. *Scand J Work Environ Health* 14:220-223.
- Kelman BJ, Walter BK, Jarboe GE, et al. 1978. Effect of dietary cadmium on calcium metabolism in the rat during late gestation. *Proc Soc Exp Biol Med* 158:614-617.
- Kershaw WC, Iga T, Klaassen CD. 1990. Ethanol decreases cadmium hepatotoxicity in rats: Possible role of hepatic metallothionein induction. *Toxicol Appl Pharmacol* 106:448-455.
- Kido T, Nogawa K. 1993. Dose-response relationship between total cadmium intake and  $\beta_2$ -microglobulinuria using logistic regression analysis. *Toxicol Lett* 69:113-120.
- Kido T, Honda R, Tsuritani I, et al. 1988. Progress of renal dysfunction in inhabitants environmentally exposed to cadmium. *Arch Environ Health* 43:213-217.
- \*Kido T, Honda R, Tsuritani I, et al. 1989a. High urinary cadmium concentration in a case of gastric cancer. *Br J Ind Med* 46:288.
- Kido T, Nogawa K, Honda R, et al. 1990a. The association between renal dysfunction and osteopenia in environmental cadmium-exposed subjects. *Environ Res* 51:71-82.
- Kido T, Nogawa K, Ishizaki M, et al. 1990b. Long-term observation of serum creatinine and arterial blood pH in persons with cadmium-induced renal dysfunction. *Arch Environ Health* 45:35-41.
- Kido T, Nogawa K, Yamada Y, et al. 1989b. Osteopenia in inhabitants with renal dysfunction induced by exposure to environmental cadmium. *Int Arch Occup Environ Health* 61:271-276.
- Kido T, Sunaga K, Nishijo M, et al. 2004. The relation of individual cadmium concentration in urine with total cadmium intake in Kakehashi River basin, Japan. *Toxicol Lett* 152(1):57-61.

## 9. REFERENCES

- Kim DW, Kim KY, Choi BS, et al. 2007. Regulation of metal transporters by dietary iron, and the relationship between body iron levels and cadmium uptake. *Arch Toxicol* 81:327-334.
- Kimura M, Otaki N. 1972. Percutaneous absorption of cadmium in rabbit and hairless mouse. *Ind Health* 10:7-10.
- Kimura M, Otaki N, Yoshiki S, et al. 1974. The isolation of metallothionein and its protective role in cadmium poisoning. *Arch Biochem Biophys* 165:340-348.
- Kipling MD, Waterhouse JAH. 1967. Cadmium and prostatic carcinoma. *Lancet* 1(7492):730-731.
- \*Kjellström T. 1986a. Critical organs, critical concentrations, and whole-body dose-response relationships. In: Friberg L, Elinder CG, Kjellström T, et al., eds. *Cadmium and health: A toxicological and epidemiological appraisal*. Vol. II. Effects and response. Boca Raton, FL: CRC Press, 231-246.
- \*Kjellström T. 1986b. Effects on bone, on vitamin D, and calcium metabolism. In: Friberg L, Elinder CG, Kjellström T, et al., eds. *Cadmium and health: A toxicological and epidemiological appraisal*. Vol. II. Effects and response. Boca Raton, FL: CRC Press, 111-158.
- Kjellström T. 1986c. Renal effects. In: Friberg L, Elinder CG, Kjellström T, et al., eds. *Cadmium and health: A toxicological and epidemiological appraisal*. Vol. II. Effects and response. Boca Raton, FL: CRC Press, 21-110.
- Kjellström T, Nordberg GF. 1978. A kinetic model of cadmium metabolism in the human being. *Environ Res* 16:248-269.
- Kjellström T, Nordberg GF. 1985. Kinetic model of cadmium metabolism. In: Friberg L, Elinder CG, Kjellström T, et al., eds. *Cadmium and health: A toxicological and epidemiological appraisal*. Vol. I. Exposure, dose and metabolism. Boca Raton, FL: CRC Press, 179-197.
- Kjellström T, Borg K, Lind B. 1978. Cadmium in feces as an estimator of daily cadmium intake in Sweden. *Environ Res* 15:242-251.
- Kjellström T, Evrin PE, Rahnster B. 1977a. Dose-response analysis of cadmium-induced tubular proteinuria. A study of urinary beta-2-microglobulin excretion among workers in a battery factory. *Environ Res* 13:303-317.
- Kjellström T, Friberg L, Rahnster B. 1979. Mortality and cancer morbidity among cadmium-exposed workers. *Environ Health Perspect* 28:199-204.
- \*Kjellström T, Shiroisky K, Evrin PE. 1977b. Urinary  $\beta_2$ -microglobulin excretion among people exposed to cadmium in the general environment. An epidemiological study in cooperation between Japan and Sweden. *Environ Res* 13:318-344.
- Klaassen CD. 1978. Effect of metallothionein on hepatic disposition of metals. *Am J Physiol* 234:E47-E53.
- Klaassen CD, Kotsonis FN. 1977. Biliary excretion of cadmium in the rat, rabbit, and dog. *Toxicol Appl Pharmacol* 41:101-112.

## 9. REFERENCES

- Klemm W, Bombach G. 1995. Trace element determination in contaminated sediments and soils by ultrasonic slurry sampling and Zeeman graphite furnace atomic absorption spectrometry. *Fresenius J Anal Chem* 353(1):12-15.
- Klimisch HJ. 1993. Lung deposition, lung clearance and renal accumulation of inhaled cadmium chloride and cadmium sulphide in rats. *Toxicology* 84:103-124.
- Kobayashi E, Okubo Y, Suwazono Y, et al. 2002a. Association between urinary calcium excretion level and mortality in inhabitants of the Jinzu River basin area of Japan. *Biol Trace Elem Res* 89:145-153.
- Kobayashi E, Okubo Y, Suwazono Y, et al. 2002b. Dose-response relationship between total cadmium intake calculated from the cadmium concentration in rice collected from each household of farmers and renal dysfunction in inhabitants of the Jinzu River basin, Japan. *J Appl Toxicol* 22(6):431-436.
- Kobayashi E, Suwazono Y, Dochi M, et al. 2008a. Estimation of benchmark doses as threshold levels of urinary cadmium, based on excretion of beta2-microglobulin in cadmium-polluted and non-polluted regions in Japan. *Toxicol Lett* 179(2):108-112.
- Kobayashi E, Suwazono Y, Dochi M, et al. 2009a. Association of lifetime cadmium intake or drinking Jinzu River water with the occurrence of renal tubular dysfunction. *Environ Toxicol* 24(5):421-428.
- Kobayashi E, Suwazono Y, Dochi M, et al. 2009b. Influence of consumption of cadmium-polluted rice or Jinzu River water on occurrence of renal tubular dysfunction and/or Itai-itai disease. *Biol Trace Elem Res* 127(3):257-268.
- Kobayashi E, Suwazono Y, Honda R, et al. 2008b. Serial changes in urinary cadmium concentrations and degree of renal tubular injury after soil replacement in cadmium-polluted rice paddies. *Toxicol Lett* 176(2):124-130.
- \*Kobayashi E, Suwazono Y, Uetani M, et al. 2005. Association between lifetime cadmium intake and cadmium concentration in individual urine. *Bull Environ Contam Toxicol* 74(5):817-821.
- Kobayashi E, Suwazono Y, Uetani M, et al. 2006. Estimation of benchmark dose as the threshold levels of urinary cadmium, based on excretion of total protein,  $\beta_2$ -microglobulin and *N*-acetyl- $\beta$ -D-glucosaminidase in cadmium nonpolluted regions in Japan. *Environ Res* 101(3):401-406.
- Koizumi N, Ohashi F, Ikeda M. 2010. Lack of correlation between cadmium level in local brown rice and renal failure mortality among the residents: A nation-wide analysis in Japan. *Int Arch Occup Environ Health* 83(3):333-339.
- Komárek J, Slaninova M, Vrestal, et al. 1991. Determination of cadmium by electrothermal atomic absorption spectrometry. *Collect Czech Chem Commun* 56:2083-2095.
- Komori M, Nishio K, Kitada M, et al. 1990. Fetus-specific expression of a form of cytochrome P-450 in human livers. *Biochemistry* 29(18):4430-4433.
- Konig HP, Heinrich U, Kock H, et al. 1992. Effect of photocorrosion on cadmium sulfide suspensions applied in animal inhalation studies with CDS particles. *Arch Environ Contam Toxicol* 22:30-35.
- Kopp SJ, Glonek T, Perry HM, et al. 1982. Cardiovascular actions of cadmium at environmental exposure levels. *Science* 217:837-839.

## 9. REFERENCES

\*Kostial K, Blanusa M, Maljkovic T, et al. 1989. Effect of a metal mixture in diet on the toxicokinetics and toxicity of cadmium, mercury and manganese in rats. *Toxicol Ind Health* 5:686-698.

Kostial K, Blanusa M, Schonwald N, et al. 1993. Organ cadmium deposits in orally exposed female rats and their pups and the depleting efficiency of sodium N-4-(methoxybenzyl)-D-glucamine-N-carbodithioate monohydrate (MeOBDCG). *Appl Toxicol* 13(3):203-207.

Kostial K, Kello D, Jugo S, et al. 1978. Influence of age on metal metabolism and toxicity. *Environ Health Perspect* 25:81-86.

Kostial K, Piasek M, Blanusa M, et al. 1996. Combined treatment with a new bis-carbodithioate C9G2DTC for mobilizing cadmium deposits in rats. *J Appl Toxicol* 16(2):157-158.

Kotsonis FN, Klaassen CD. 1977. Toxicity and distribution of cadmium administered to rats at sublethal doses. *Toxicol Appl Pharmacol* 41:667-680.

Kotsonis FN, Klaassen CD. 1978. The relationship of metallothionein to the toxicity of cadmium after prolonged administration to rats. *Toxicol Appl Pharmacol* 46:39-54.

\*Kowal NE. 1988. Urinary cadmium and B<sub>2</sub>-microglobulin: Correlation with nutrition and smoking history. *J Toxicol Environ Health* 25:179-183.

Kozłowska D, Brzozowska A, Sulkowska J, et al. 1993. The effect of cadmium on iron metabolism in rats. *Nutr Res* 13:1163-1172.

\*Kreis IA, de Does M, Hoekstra JA, et al. 1993. Effects of cadmium on reproduction, an epizootologic study. *Teratology* 48(3):189-196.

Krishnan K, Andersen ME. 1994. Physiologically based pharmacokinetic modeling in toxicology. In: Hayes AW, ed. *Principles and methods of toxicology*. 3rd ed. New York, NY: Raven Press, Ltd., 149-188.

Krishnan K, Andersen ME, Clewell HJ, et al. 1994. Physiologically based pharmacokinetic modeling of chemical mixtures. In: Yang RSH, ed. *Toxicology of chemical mixtures: Case studies, mechanisms, and novel approaches*. San Diego, CA: Academic Press, 399-437.

\*Krishnan SS, Harrison JE, Jervis RE, et al. 1988. Studies of skeletal cadmium assay and toxicity. *J Radioanal Nucl Chem* 124:79-84.

Krzystyniak K, Fournier M, Trottier B, et al. 1987. Immunosuppression in mice after inhalation of cadmium aerosol. *Toxicol Lett* 38:1-12.

\*Kucharz EJ. 1988. Effect of cadmium intoxication on collagen and elastin content in tissues of the rat. *Bull Environ Contam Toxicol* 40:273-279.

\*Kudo N, Nakagawa Y, Waku K. 1990. The effect of cadmium on the composition and metabolism of hepatic fatty acids in zinc-adequate and zinc-deficient rats. *Toxicol Lett* 50:203-212.

Kuhnert PM, Kihnert BR, Bottoms SF, et al. 1982. Cadmium levels in maternal blood, fetal cord blood, and placental tissues of pregnant women who smoke. *Am J Obstet Gynecol* 142:1021-1025.

## 9. REFERENCES

- Kurokawa Y, Takahashi M, Maekawa A, et al. 1989. Promoting effect of metal compounds on liver, stomach, kidney, pancreas, and skin carcinogenesis. *Am Coll Toxicol* 8:1235-1239.
- Kuroshima R. 1992. Cadmium accumulation in the mummichog, *Fundulus heteroclitus*, adapted to various salinities. *Bull Environ Contam Toxicol* 49(5):680-685.
- Kutzman RS, Drew RT, Shiotsuka RN, et al. 1986. Pulmonary changes resulting from subchronic exposure to cadmium chloride aerosol. *J Toxicol Environ Health* 17:175-189.
- Lagerkvist BJ, Lundstrom NG. 2004. Lead-and cadmium levels in children living close to a copper and lead smelter in Sweden. *Biometals* 17(5):593-594.
- \*Lagerkvist BJ, Nordberg GF, Soderberg HA, et al. 1992. Placental transfer of cadmium. In: Nordberg GF, Herber RFM, Alessio L, eds. *Cadmium in the human environment: Toxicity and carcinogenicity*. IARC Scientific Publications No. 118. Lyon, France: International Agency for Research on Cancer, 287-291.
- \*Lagerkvist BJ, Soderberg H-A, Nordberg GF, et al. 1993. Biological monitoring of arsenic, lead and cadmium in occupationally and environmentally exposed pregnant women. *Scand J Work Environ Health* 19(Suppl. 1):50-53.
- \*Lai YL, Diamond L. 1992. Cigarette smoke exposure does not prevent cadmium-induced alterations in rat lungs. *J Toxicol Environ Health* 35(1):63-76.
- Lamm SH, Hall TA, Kutcher JS. 1994. Particulate exposure among cadmium workers: Is the risk due to cigarette, cadmium or arsenic particulates? *Ann Occup Hyg* 38:873-878.
- Lamm SH, Parkinson M, Anderson M, et al. 1992. Determinants of lung cancer risk among cadmium-exposed workers. *Ann Epidemiol* 2:195-211.
- Landsberger S, Wu D. 1993. Improvement of analytical sensitivities for the determination of antimony, arsenic, cadmium, indium, iodine molybdenum, silicon and uranium in airborne particulate matter by epithermal neutron activation analysis. *J Radioanal Nucl Chem* 167(2):219-225.
- Lane RE, Campbell AC. 1954. Fatal emphysema in two men making a copper cadmium alloy. *Br J Ind Med* 11:118-122.
- Larregle EV, Varas SM, Oliveros LB, et al. 2008. Lipid metabolism in liver of rat exposed to cadmium. *Food Chem Toxicol* 46(5):1786-1792.
- Larsson SE, Piscator M. 1971. Effect of cadmium on skeletal tissue in normal and cadmium-deficient rats. *Isr J Med Sci* 7:495-498.
- \*Laskey JW, Rehnberg GL, Favor MJ, et al. 1980. Chronic ingestion of cadmium and/or tritium. II. Effects on growth, development, and reproductive function. *Environ Res* 22:466-475.
- \*Laskey JW, Rehnberg GL, Laws SC, et al. 1984. Reproductive effects of low acute doses of cadmium chloride in adult male rats. *Toxicol Appl Pharmacol* 73:250-255.

## 9. REFERENCES

- Lauwerys R, De Wals PH. 1981. Environmental pollution by cadmium and mortality from renal diseases. *Lancet* 1(8216):383.
- Lauwerys R, Bernard A, Buchet JP, et al. 1991. Does environmental exposure to cadmium represent a health risk? Conclusions from the Cadmibel study. *Acta Clin Belg* 46(44):219-225.
- Lauwerys R, Buchet JP, Roels H, et al. 1978. Placental transfer of lead, mercury, cadmium, and carbon monoxide in women. I. Comparison of the frequency distributions of the biological indices in maternal and umbilical cord blood. *Environ Res* 15:278-289.
- Lauwerys R, Hardey R, Job M, et al. 1984. Environmental pollution by cadmium and cadmium body burden: An autopsy study. *Toxicol Lett* 23:287-289.
- Lauwerys RR, Bernard AM, Roels HA, et al. 1994. Cadmium: Exposure markers as predictors of nephrotoxic effects. *Clin Chem* 40(7):1391-1394.
- Lazebnik N, Kuhnert BR, Kihnert PM. 1989. Zinc, cadmium, and hypertension in parturient women. *Am J Obstet Gynecol* 161:437-440.
- Leduc D, de Francquen P, Jacobovitz D, et al. 1993. Association of cadmium exposure with rapidly progressive emphysema in a smoker. *Thorax* 48:570-571.
- Lee, MS; Park, SK; Hu, H; et al. 2011. Cadmium exposure and cardiovascular disease in the 2005 Korea National Health and Nutrition Examination Survey. *Environ Res* 111(1):171-176.
- Leeder JS, Kearns GL. 1997. Pharmacogenetics in pediatrics: Implications for practice. *Pediatr Clin North Am* 44(1):55-77.
- Lehman LD, Klaassen CD. 1986. Dosage-dependent disposition of cadmium administered orally to rats. *Toxicol Appl Pharmacol* 84:159-167.
- \*Lehotzky K, Ungvary G, Polinak D, et al. 1990. Behavioral deficits due to prenatal exposure to cadmium chloride in CFY rat pups. *Neurotoxicol Teratol* 12:169-172.
- Leikin JB, Paloucek FP. 2002. Cadmium. In: *Poisoning and toxicology handbook*. Hudson, OH: Lexi-Comp, Inc., 309-310.
- Lemen RA, Lee JS, Wagoner JK, et al. 1976. Cancer mortality among cadmium production workers. *Ann N Y Acad Sci* 271:273-279.
- Leroyer A, Hemon D, Nisse C, et al. 2001. Determinants of cadmium burden levels in a population of children living in the vicinity of nonferrous smelters. *Environ Res* 87(3):147-159.
- Leung HW. 1993. Physiologically-based pharmacokinetic modelling. In: Ballentyne B, Marrs T, Turner P, eds. *General and applied toxicology*. Vol. 1. New York, NY: Stockton Press, 153-164.
- Levy LS, Clack J. 1975. Further studies on the effect of cadmium on the prostate gland. I. Absence of prostatic changes in rats given oral cadmium sulfate for two years. *Ann Occup Hyg* 17:205-211.

## 9. REFERENCES

- Levy LS, Clack J, Roe FJ. 1975. Further studies on the effect of cadmium on the prostate gland. II. Absence of prostatic changes in mice given oral cadmium sulfate for eighteen months. *Ann Occup Hyg* 17:213-220.
- Lewis GP, Coughlin L, Jusko W, et al. 1972a. Contribution of cigarette smoking to cadmium accumulation in man. *Lancet* 1:291-292.
- Lewis GP, Jusko WJ, Coughlin LL. 1972b. Cadmium accumulation in man: Influence of smoking, occupation, alcoholic habit and disease. *J Chronic Dis* 25:717-726.
- Lewis RJ, ed. 2000. In: Sax's dangerous properties of industrial materials. Vol. 2. 10th ed. New York, NY: John Wiley & Sons, Inc., 667, 669, 673.
- Lewis RJ, ed. 2001. In: Cadmium and cadmium compounds. Hawley's condensed chemical dictionary. 14th ed. New York, NY: John Wiley & Sons, Inc., 186-188.
- Lide DR, ed. 2005. CRC handbook of chemistry and physics. 86th ed. Boca Raton, FL: Taylor & Francis, 4-53, 4-54.
- Lieberman KW, Kramer HH. 1970. Cadmium determination in biological tissue by neutron activation analysis. *Anal Chem* 42:266-267.
- Lind Y, Wicklund Glynn A, Engman J, et al. 1995. Bioavailability of cadmium from crab hepatopancreas and mushroom in relation to inorganic cadmium: A 9-week feeding study in mice. *Food Chem Toxicol* 33(8):667-673.
- Lindqvist B, Nystrom K, Stegmayr B, et al. 1989. Cadmium concentration in human kidney biopsies. *Scand J Urol Nephrol* 23:213-217.
- Liu J, Klaassen CD. 1996. Absorption and distribution of cadmium in metallothionein-I transgenic mice. *Fundam Appl Toxicol* 29:294-300.
- Liu J, Liu Y, Habecbu SS, et al. 1998. Susceptibility of MT-null mice to chronic CdCl<sub>2</sub>-induced nephrotoxicity indicates that renal injury is not mediated by the CdMT complex. *Toxicol Sci* 46(1):197-203.
- Liu J, Liu Y, Michalska AE, et al. 1996. Distribution and retention of cadmium in metallothionein I and II null mice. *Toxicol Appl Pharmacol* 136(2):260-268.
- Liu YZ, Huang JX, Luo CM, et al. 1985. Effects of cadmium on cadmium smelter workers. *Scand J Work Environ Health* 11(Suppl 4):29-32.
- Livingston AL. 1978. Forage plant estrogens. *J Toxicol Environ Health* 4(2-3):301-324.
- Loeser E, Lorke D. 1977a. Semichronic oral toxicity of cadmium. I. Studies on rats. *Toxicology* 7:215-224.
- Loeser E, Lorke D. 1977b. Semichronic oral toxicity of cadmium. II. Studies on dogs. *Toxicology* 7:225-232.

## 9. REFERENCES

- Lopez-Ortal P, Souza V, Bucio L, et al. 1999. DNA damage produced by cadmium in a human fetal hepatic cell line. *Mutat Res* 439(2):301-306.
- Löser E. 1980. A two year oral carcinogenicity study with cadmium on rats. *Cancer Lett* 9(3):191-198.
- Lu J, Jin T, Nordberg G, et al. 2001. Metallothionein gene expression in peripheral lymphocytes from cadmium-exposed workers. *Cell Stress Chaperones* 6(2):97-104.
- Lucas PA, Jariwalla AG, Jones JH, et al. 1980. Fatal cadmium fume inhalation. *Lancet* 2(8187):205.
- Lutzen A, Liberti SE, Rasmussen LJ. 2004. Cadmium inhibits human DNA mismatch repair *in vivo*. *Biochem Biophys Res Commun* 321(1):21-25.
- Lynn S, Lai HT, Kao SM, et al. 1997. Cadmium inhibits DNA strand break rejoining in methyl methanesulfonate-treated CHO-K1 cells. *Toxicol Appl Pharmacol* 144(1):171-176.
- Ma R, Van Mol W, Adams F. 1994a. Determination of cadmium, copper and lead in environmental samples. An evaluation of flow injection on-line sorbent extraction for flame atomic absorption spectrometry. *Anal Chim Acta* 285:33-43.
- Ma R, Van Mol W, Adams F. 1994b. Selective flow injection sorbent extraction for determination of cadmium, copper and lead in biological and environmental samples by graphite furnace absorption spectrometry. *Anal Chim Acta* 293:251-260.
- Machemer L, Lorke D. 1981. Embryotoxic effect of cadmium on rats upon oral administration. *Toxicol Appl Pharmacol* 58:438-443.
- Mailhes JB, Preston RJ, Yuan ZP, et al. 1988. Analysis of mouse metaphase II oocytes as an assay for chemically induced aneuploidy. *Mutat Res* 198:145-152.
- \*Maitani T, Cuppage FE, Flaassen CD. 1988. Nephrotoxicity of intravenously injected cadmium-metallothionein: Critical concentration and tolerance. *Fundam Appl Toxicol* 10:98-108.
- Maitani T, Waalkes MP, Klaassen CD. 1984. Distribution of cadmium after oral administration of cadmium-thionein to mice. *Toxicol Appl Pharmacol* 74:237-243.
- Malave I, de Ruffino DT. 1984. Altered immune response during cadmium administration in mice. *Toxicol Appl Pharmacol* 74:46-56.
- \*Manca D, Ricard AC, Tra HV et al. 1994. Relation between lipid peroxidation and inflammation in the pulmonary toxicity of cadmium. *Arch Toxicol* 68(6):364-369.
- Mandel R, Ryser HJP. 1984. Mutagenicity of cadmium in *Salmonella typhimurium* and its synergism with two nitrosamines. *Mutat Res* 138:9-16.
- Mangler B, Fischer G, Classen HG, et al. 1988. The induction and reversibility of cadmium-induced nephropathy in rats: Quantitative analytical and histopathological studies. *Trace Elem Med* 5:143-149.
- Mann SJ. 1973. Whole body retention and tissue distribution of intravenously administered <sup>115m</sup>Cd in goats, sheep, and dogs. M.S. Thesis, Purdue University.

## 9. REFERENCES

- Maravelias C, Hatzakis A, Katsouyanni, et al. 1989. Exposure to lead and cadmium of children living near a lead smelter at Lavrion, Greece. *Sci Total Environ* 84:61-70.
- Marlowe M, Cossairt A, Moon C, et al. 1985. Main and interaction effects of metallic toxins on classroom behavior. *J Abnorm Child Psychol* 13:185-198.
- Martin FM, Witschi HP. 1985. Cadmium-induced lung injury: Cell kinetics and long-term effects. *Toxicol Appl Pharmacol* 80:215-227.
- Masaoka T, Akahori F, Arai S, et al. 1994. A nine-year chronic toxicity study of cadmium ingestion in monkeys. I. Effects of dietary cadmium on the general health of monkeys. *Vet Hum Toxicol* 36(3):189-194.
- Mason HJ. 1990. Occupational cadmium exposure and testicular endocrine function. *Hum Exp Toxicol* 9:91-94.
- Mason HJ, Davison AG, Wright AL, et al. 1988. Relations between liver cadmium, cumulative exposure, and renal function in cadmium alloy workers. *Br J Ind Med* 45:793-802.
- Mason HJ, Stevenson AJ, Williams N, et al. 1999. Intra-individual variability in markers of proteinuria for normal subjects and those with cadmium-induced renal dysfunction: Interpretation of results from untimed, random urine samples. *Biomarkers* 4(2):118-128.
- Mason HJ, Williams N, Armitage S, et al. 1999. Follow up of workers previously exposed to silver solder containing cadmium. *Occup Environ Med* 56(8):553-558.
- Mason RP, Laporte JM, Andres S. 2000. Factors controlling the bioaccumulation of mercury, methylmercury, arsenic, selenium, and cadmium by freshwater invertebrates and fish. *Arch Environ Contam Toxicol* 38:283-297.
- Mathews TD. 1994. Contaminants in recreationally important estuarine finfish from South Carolina. *Bull Environ Contam Toxicol* 53:412-419.
- Matsubara-Khan J. 1974. Compartmental analysis for the evaluation of biological half lives of cadmium and mercury in mouse organs. *Environ Res* 7:54-67.
- Matsuda T, Kobayashi E, Okubo Y, et al. 2002. Association between renal dysfunction and mortality among inhabitants in the region around the Jinzu River Basin polluted by cadmium. *Environ Res* 88:156-163.
- Mayr U, Butsch A, Schneider S. 1992. Validation of two *in vitro* test systems for estrogenic activities with zearalenone, phytoestrogens and cereal extracts. *Toxicology* 74(2-3):135-149.
- McBride MB. 1995. Toxic metal accumulation from agricultural use of sludge: Are USEPA regulations protective? *J Environ Qual* 24:5-18.
- McComish MF, Ong JH. 1988. Cadmium. In: Bodek I, Lyman WJ, Reehl WF, et al., eds. *Environmental inorganic chemistry: Properties, processes, and estimation methods*. New York, NY: Pergamon Press, 7.5-1 to 7.5-12.

## 9. REFERENCES

- McDiarmid MA, Freeman CS, Grossman EA, et al. 1997. Follow-up of biologic monitoring results in cadmium workers removed from exposure. *Am J Ind Med* 32:261-267.
- McKelvey W, Gwynn RC, Jeffery N, et al. 2007. A biomonitoring study of lead, cadmium, and mercury in the blood of New York City adults. *Environ Health Perspect* 115(10):1435-1441.
- McKenzie-Parnell JM, Kjellström TE, Sharma RP, et al. 1988. Unusually high intake and fecal output of cadmium, and fecal output of other trace elements in New Zealand adults consuming dredge oysters. *Environ Res* 46:1-14.
- McLellan JS, Flanagan PR, Chamberlain MJ, et al. 1978. Measurement of dietary cadmium absorption in humans. *J Toxicol Environ Health* 4:131-138.
- Meltzer HM, Brantsaeter AL, Borch-Johnsen B, et al. 2010. Low iron stores are related to higher blood concentrations of manganese, cobalt and cadmium in non-smoking, Norwegian women in the HUNT 2 study. *Environ Res* 110(5):497-504.
- Menke A, Guallar E, Shiels MS, et al. 2008. The association of urinary cadmium with sex steroid hormone concentrations in a general population sample of U.S. adult men. *BMC Publ Health* 8:72-79.
- Menke, A; Muntner, P; Silbergeld, EK; et al. 2009. Cadmium levels in urine and mortality among U.S. adults. *Environ Health Perspect* 117(2):190-196.
- Mielke HW, Adams JL, Chaney RL, et al. 1991. The pattern of cadmium in the environment of five Minnesota cities. *Environ Geochem Health* 13:29-34.
- Migliore L, Cocchi L, Nesti C, et al. 1999. Micronuclei assay and FISH analysis in human lymphocytes treated with six metal salts. *Environ Mol Mutagen* 34(4):279-284.
- Mikhailova MV, Littlefield NA, Hass BS, et al. 1997. Cadmium-induced  $\delta$ -hydroxydeoxyguanosine formation, DNA strand breaks and antioxidant enzyme activities in lymphoblastoid cells. *Cancer Lett* 115:141-148.
- Miller ML, Murthy L, Basom CR, et al. 1974a. Alteration in hepatocytes after manipulation of the diet: Copper, zinc and cadmium interactions. *Am J Anat* 141:23-40.
- Miller ML, Murthy L, Sorenson JR. 1974b. Fine structure of connective tissue after ingestion of cadmium: Observations on interstitium on male rat lung. *Arch Pathol* 98:386-392.
- Miller WJ, Blackmon DM, Gentry RP, et al. 1969. Effect of dietary cadmium on tissue distribution of <sup>109</sup>cadmium following a single oral dose in young goats. *J Dairy Sci* 32(12):2029-2033.
- Milvy P, Kay K. 1978. Mutagenicity of 19 major graphic arts and printing dyes. *J Toxicol Environ Health* 4:41-36.
- Min KS, Ueda H, Tanaka K. 2008. Involvement of intestinal calcium transporter 1 and metallothionein in cadmium accumulation in the liver and kidney of mice fed a low-calcium diet. *Toxicol Lett* 176:85-92.
- Misra RR, Smith GT, Waalkes MP. 1998. Evaluation of the direct genotoxic potential of cadmium in four different rodent cell lines. *Toxicology* 126:103-114.

## 9. REFERENCES

- Mokhtar G, Hossny E, el-Awady M, et al. 2002. *In utero* exposure to cadmium pollution in Cairo and Giza governorates of Egypt. *East Mediter Health J* 8(2-3):254-260.
- Monzawa K, Kido T, Yamaya H, et al. 1998. Urinary excretion levels of sodium and potassium in environmental cadmium-exposed subjects. *Toxicology* 127:187-193.
- Moore W, Stara JF, Crocker WC, et al. 1973. Comparison of <sup>115</sup>Cd retention in rats following different routes of administration. *Environ Res* 6:473-478.
- Morgan H, Sherlock JC. 1984. Cadmium intake and cadmium in the human kidney. *Food Addit Contam* 1:45-51.
- Morgan H, Simms DI. 1988. The Shipham Report: Discussion and conclusions. *Sci Total Environ* 75:135-143.
- Moriguchi J, Ezaki T, Tsukahara T, et al. 2005a.  $\alpha_1$ -Microglobulin levels and correlation with cadmium and other metals in urine of non-smoking women among general populations in Japan. *Toxicol Environ Chem* 87(1):119-133.
- Moriguchi J, Ezaki T, Tsukahara T, et al. 2005b. Decreases in urine specific gravity and urinary creatinine in elderly women. *Int Arch Occup Environ Health* 78:438-445.
- Morrow H. 2001. Cadmium and cadmium alloys. In: Kirk-Othmer encyclopedia of chemical technology. John Wiley & Sons, Inc., 471-507.  
<http://www.mrw.interscience.wiley.com/emrw/9780471238966/kirk/article/cadmcar.a01/current/pdf?hd=All%2Ccadmium>. April 29, 2008.
- Morrow H. 2010. Cadmium and cadmium alloys. In: Kirk-Othmer encyclopedia of chemical technology. John Wiley & Sons, Inc.  
<http://onlinelibrary.wiley.com/doi/10.1002/0471238961.0301041303011818.a01.pub3/abstract>. September 10, 2012.
- Morselli PL, Franco-Morselli R, Bossi L. 1980. Clinical pharmacokinetics in newborns and infants: Age-related differences and therapeutic implications. *Clin Pharmacokin* 5(6):485-527.
- \*Mueller PW, Paschal DC, Hammel RR, et al. 1992. Chronic renal effects in three studies of men and women occupationally exposed to cadmium. *Arch Environ Contam Toxicol* 23:125-136.
- Mueller PW, Smith SJ, Steinberg KK, et al. 1989. Chronic renal tubular effects in relation to urine cadmium levels. *Nephron* 52:45-54.
- Mukherjee A, Giri AK, Sharma A, et al. 1988a. Relative efficacy of short-term tests in detecting genotoxic effects of cadmium chloride in mice *in vivo*. *Mutat Res* 206:285-295.
- Mukherjee A, Sharma A, Talukder G. 1988b. Effect of selenium on cadmium-induced chromosomal aberrations in bone marrow cells of mice. *Toxicol Lett* 41:23-29.
- \*Muller L, Stacey NH. 1988. Subcellular toxicity of low level cadmium in rats: Effect on cytochrome C oxidase. *Toxicology* 51:25-34.

## 9. REFERENCES

- Muller L, Abel J, Ohnesorge FK. 1986. Absorption and distribution of cadmium (Cd), copper and zinc following oral subchronic low level administration to rats of different binding forms of cadmium (Cd-acetate, Cd-metallothionein, Cd-glutathione). *Toxicology* 39:187-195.
- Muller L, Craig G, Stacey NH. 1988. Dose response of rat liver to low level cadmium. *Bull Environ Contam Toxicol* 40:301-308.
- Munshower FF. 1977. Cadmium accumulation in plants and animals of polluted and nonpolluted grasslands. *J Environ Qual* 6:411-413.
- Muntau H, Baudo R. 1992. Sources of cadmium, its distribution and turnover in the freshwater environment. *IARC Sci Publ* 118:133-148.
- Murthy RC, Saxena DK, Lal B, et al. 1989. Chronic cadmium-ethanol administration alters metal distribution and some biochemicals in rat brain. *Biochem Int* 19:135-143.
- Muys T. 1984. Quantitative determination of lead and cadmium in foods by programmed dry ashing and atomic absorption spectrophotometry with electrothermal atomization. *Analyst* 109:119-121.
- Nagaraj M, Sunitha S, Varalakshmi P. 2000. Effect of lupeol, a pentacyclic triterpene, on the lipid peroxidation and antioxidant status in rat kidney after chronic cadmium exposure. *J Appl Toxicol* 20(5):413-417.
- Nagyrajtenyi L, Schulz H, Desi I. 1997. Behavioural and functional neurotoxicological changes caused by cadmium in a three-generational study in rats. *Hum Exp Toxicol* 16(12):691-699.
- \*Nagyova A, Galbavy S, Ginter E. 1994b. Histopathological evidence of vitamin C protection against Cd-nephrotoxicity in guinea pigs. *Exp Toxicol Pathol* 46(1):11-14.
- \*Nagyova A, Ginter E, Stefek M. 1994a. Effect of cadmium on hepatic microsomal monooxygenase activities in guinea pigs with low and high ascorbic acid intake. *J Nutr Biochem* 5(1):10-14.
- Nakada T, Furuta H, Koike H, et al. 1989. Impaired urine concentrating ability in Itai-itai Ouch-ouch disease. *Int Urol Nephrol* 21:201-210.
- Nakadaira H, Nishi S. 2003. Effects of low-dose cadmium exposure on biological examinations. *Sci Total Environ* 308(1-3):49-62.
- Nakagawa H, Nishiojo M, Morikawa Y, et al. 1993. Urinary  $\beta_2$ -microglobulin concentration and mortality in a cadmium-polluted area. *Arch Environ Health* 48:428-435.
- Nakagawa H, Sawano S, Okumura Y, et al. 1987. Mortality study of inhabitants in a cadmium-polluted area. *Bull Environ Contam Toxicol* 38:553-560.
- Nakashima K, Kobayashi E, Nogawa K, et al. 1997. Concentration of cadmium in rice and urinary indicators of renal dysfunction. *Occup Environ Med* 54:750-755.
- Nam DQ, Skacel F, Buryan P. 1994. Determination of airborne lead and cadmium collected on glass fibre filters by differential-pulse anodic stripping voltammetry. *Sci Total Environ* 144:87-92.

## 9. REFERENCES

- Naqvi SM, Howell RD. 1993. Cadmium and lead uptake by red swamp crayfish (*Procambarus clarkii*) of Louisiana. *Bull Environ Contam Toxicol* 51(2):296-302.
- Naruse I, Hayashi Y. 1989. Amelioration of the teratogenicity of cadmium by the metallothionein induced by bismuth nitrate. *Teratology* 40:459-465.
- NAS/NRC. 1989. Report of the oversight committee. In: *Biologic markers in reproductive toxicology*. Washington, DC: National Academy of Sciences, National Research Council, National Academy Press, 15-35.
- Nation JR, Bourgeois AE, Clark DE, et al. 1984. The effects of oral cadmium exposure on passive avoidance performance in the adult rat. *Toxicol Lett* 20:41-47.
- Nation JR, Grover CA, Bratton GR, et al. 1990. Behavioral antagonism between lead and cadmium. *Neurotoxicol Teratol* 12:99-104.
- Nation JR, Pugh CK, Von Stutz J, et al. 1989. The effects of cadmium on the self-administration of ethanol and an isocaloric/isohedonic equivalent. *Neurotoxicol Teratol* 11:509-514.
- Navas-Acien A, Silbergeld EK, Sharrett AR, et al. 2005. Metals in urine and peripheral arterial disease. *Environ Health Perspect* 113(2):164-169.
- Nayak BN, Ray M, Persaud TV, et al. 1989. Embryotoxicity and *in vivo* cytogenetic changes following maternal exposure to cadmium chloride in mice. *Exp Pathol* 36:75-80.
- Newton D, Johnson P, Lally AE, et al. 1984. The uptake by man of cadmium ingested in crab meat. *Hum Toxicol* 3:23-28.
- Nilsson U, Skerfving S. 1993. *In vivo* X-ray fluorescence measurements of cadmium and lead. *Scand J Work Environ Health* 19(Suppl 1):54-58.
- Nimmo M, Fones G. 1994. Application of adsorptive cathodic stripping voltammetry for the determination of Cu, Cd, Ni and Co in atmospheric samples. *Anal Chim Acta* 291:321-328.
- NIOSH. 1989. Numbers of potentially exposed employees. Washington, DC: U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health.
- NIOSH. 1990. Numbers of potentially exposed employees. National Occupational Exposure Survey. U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health. <http://www.cdc.gov/noes/>. July 8, 2008.
- \*NIOSH. 1992a. NIOSH manual of analytical methods. Recommended exposure level. Washington, DC: U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health.
- NIOSH. 1992b. NIOSH recommendations for occupational safety and health. Compendium of policy documents and statements. Categories of pesticides. Atlanta, GA: National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention. <http://www.cdc.gov/niosh/92-100.html>. April 29, 2008.

## 9. REFERENCES

- NIOSH. 1994. Method 7048: Cadmium and compounds, as Cd. NIOSH Manual of Analytical Methods (NMAM). 4th ed. National Institute for Occupational Safety and Health. <http://www.cdc.gov/niosh/nmam/pdfs/7048.pdf>. May 13, 2008.
- NIOSH. 2003. Method 7300: Elements by ICP (nitric/perchloric acid ashing). National Institute for Occupational Safety and Health. <http://www.cdc.gov/niosh/nmam/pdfs/7300.PDF>. May 13, 2008.
- NIOSH. 2005. Cadmium. NIOSH pocket guide to chemical hazards. Atlanta, GA: National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention. <http://www.cdc.gov/niosh/npg/> April 24, 2008.
- Nishijo M, Morikawa Y, Nakagawa H, et al. 2006. Causes of death and renal tubular dysfunction in residents exposed to cadmium in the environment. *Occup Environ Med* 63:545-550.
- Nishijo M, Nakagawa H, Honda R, et al. 2002. Effects of maternal exposure to cadmium on pregnancy outcome and breast milk. *Occup Environ Med* 59(6): 394-397.
- Nishijo M, Nakagawa H, Morikawa Y, et al. 2004a. Mortality in a cadmium polluted area Japan. *Biometals* 17(5):535-538.
- Nishijo M, Nakagawa H, Morikawa Y, et al. 1995. Mortality of inhabitants in an area polluted by cadmium: 15 year follow up. *Occup Environ Med* 52:181-184.
- Nishijo M, Satarug S, Honda R, et al. 2004b. The gender differences in health effects of environmental cadmium exposure and potential mechanisms. *Mol Cell Biochem* 255:87-92.
- Nishino H, Shiroishi K, Kagamimori S, et al. 1988. Studies on the increase in serum concentrations of urea cycle amino acids among subjects exposed to cadmium. *Bull Environ Contam Toxicol* 40:553-560.
- Nishioka H. 1975. Mutagenic activities of metal compounds in bacteria. *Mutat Res* 311:185-189.
- \*Noack-Fuller G, DeBeer C, Seibert H. 1993. Cadmium, lead, selenium, and zinc in semen of occupationally unexposed men. *Andrologia* 25(1):7-12.
- \*Nogawa K. 1984. Biological indicators of cadmium nephrotoxicity in persons with low-level cadmium exposure. *Environ Health Perspect* 54:163-169.
- Nogawa K, Honda R, Kido T, et al. 1989. A dose-response analysis of cadmium in the general environment with special reference to total cadmium intake limit. *Environ Res* 48:7-16.
- \*Nogawa K, Kawano S, Nishi M. 1981a. Mortality study of inhabitants in a cadmium-polluted area with special reference to low-molecular-weight proteinuria. In: Ernst WH, ed. *Proceedings of the International Conference on Heavy Metals in the Environment*. Edinburgh: CEP Consultants, 538-540.
- Nogawa K, Kobayashi E, Honda R, et al. 1980. Renal dysfunction of inhabitants in a cadmium-polluted area. *Environ Res* 23:13-23.
- Nogawa K, Kobayashi E, Konishi F. 1981b. Comparison of bone lesions in chronic cadmium intoxication and vitamin D deficiency. *Environ Res* 23:233-249.

## 9. REFERENCES

- Nogawa K, Tsuritani I, Kido T, et al. 1987. Mechanism for bone disease found in inhabitants environmentally exposed to cadmium: Decreased serum 1-alpha, 25-dihydroxy vitamin D level. *Int Arch Occup Environ Health* 59:21-30.
- Nogawa K, Tsuritani I, Kido T, et al. 1990. Serum vitamin D metabolites in cadmium-exposed persons with renal damage. *Int Arch Occup Environ Health* 62:189-193.
- Nomiyama K, Nomiyama H. 1986. Critical concentrations of 'unbound' cadmium in the rabbit renal cortex. *Experientia* 42:149.
- Nomiyama K, Sugata Y, Yamamoto A, et al. 1975. Effects of dietary cadmium on rabbits. I. Early signs of cadmium intoxication. *Toxicol Appl Pharmacol* 31:4-12.
- Noonan CW, Sarasua SM, Campagna D, et al. 2002. Effects of exposure to low levels of environmental cadmium on renal biomarkers. *Environ Health Perspect* 110(2):151-155.
- Nordberg GF. 2010. Biomarkers of exposure, effects and susceptibility in humans and their application in studies of interactions among metals in China. *Toxicol Lett* 192(1):45-49.
- Nordberg G, Jin T, Bernard A, et al. 2002. Low bone density and renal dysfunction following environmental cadmium exposure in China. *Ambio* 31(6):478-481.
- Nordberg GF, Kjellström T. 1979. Metabolic model for cadmium in man. *Environ Health Perspective* 28:211-217.
- Nordberg GF, Jin T, Kong Q, et al. 1997. Biological monitoring of cadmium exposure and renal effects in a population group residing in a polluted area in China. *Sci Total Environ* 199:111-114.
- Nordberg GF, Kjellström T, Nordberg M. 1985. Kinetics and metabolism. In: Friberg L, Elinder CG, Kjellström T, et al. eds. *Cadmium and health: A toxicological and epidemiological appraisal*. Vol. I. Exposure, dose, and metabolism. Boca Raton, FL: CRC Press, 103-178.
- Nordberg M, Nuottaniemi I, Cherian MG, et al. 1986. Characterization studies on the cadmium-binding proteins from two species of New Zealand oysters. *Environ Health Perspect* 65:57-62.
- Nordberg G, Slorach S, Steinstrom T. 1973. [Cadmium poisoning caused by a cooled-soft-drink machine.] *Lakartidningen* 70:601-604. (Swedish)
- NRC. 1993. *Pesticides in the diets of infants and children*. Washington, DC: National Research Council. National Academy Press.
- NRC. 2002. *Biosolids applied to land: Advancing standards and practices*. Washington, DC: National Research Council. National Academy Press.  
<http://water.epa.gov/scitech/wastetech/biosolids/upload/complete.pdf>. September 10, 2012.
- NTP. 1994. Cadmium and certain cadmium compounds. In: *Seventh annual report on carcinogens, summary 1994*. U.S. National Toxicology Program, U.S. Public Health Service, Department of Health and Human Services, 111-116.

## 9. REFERENCES

- NTP. 1995. NTP technical report on toxicity studies of cadmium oxide (CAS No. 1306-19-0) administered by inhalation to F344/N rats and B6C3F mice. Research Triangle Park, NC: National Toxicology Program. Toxicity report series number 39.
- NTP. 2005. Cadmium. Report on carcinogens. 11th ed. Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service, National Toxicology Program. <http://ntp-server.niehs.nih.gov/ntp/roc/toc11.html>. April 24, 2008.
- NTP. 2011. Report on carcinogens. Twelfth edition. National Toxicology Program. U.S. Department of Health and Human Services, Public Health. <http://ntp-server.niehs.nih.gov/ntp/roc/twelfth/roc12.pdf> February 22, 2012.
- Nwosu JU, Harding AK, Linder G. 1995. Cadmium and lead uptake by edible crops grown in a silt loam soil. *Bull Environ Contam Toxicol* 54:570-578.
- NYS Dept of Health. 2006. New York State heavy metals registry 2000 through 2005. [http://www.health.state.ny.us/environmental/workplace/heavy\\_metals\\_registry/docs/report\\_2005.pdf](http://www.health.state.ny.us/environmental/workplace/heavy_metals_registry/docs/report_2005.pdf). May 12, 2008.
- \*Oberdoerster G, Baumert H-P, Hochrainer D. 1979. The clearance of cadmium aerosols after inhalation exposure. *Am Ind Hyg Assoc J* 40(6):443-450.
- Oberdörster G. 1992. Pulmonary deposition, clearance and effects of inhaled soluble and insoluble cadmium compounds. In: Nordberg GF, Herber RFM, Alessio L, eds. *Cadmium in the human environment: Toxicity and carcinogenicity*. Lyon: International Agency for Research on Cancer, 189-204.
- Oberdörster G, Cherian MG, Baggs RB. 1994. Importance of species differences in experimental pulmonary carcinogenicity of inhaled cadmium for extrapolation to humans. *Toxicol Lett* 72:339-343.
- Oberly TJ, Piper CE, McDonald DS. 1982. Mutagenicity of metal salts in the L5178Y mouse lymphoma assay. *J Toxicol Environ Health* 9:367-376.
- \*O'Brien IG, King LJ. 1989. The effect of chronic parenteral administration of cadmium on isoenzyme levels of alkaline phosphatase in intestinal mucosa. *Toxicology* 56:87-94.
- OECD. 1995. Risk reduction monograph No. 5: Cadmium. Background and national experience with reducing risk. Paris, France: Organization for Economic Co-operation and Development. OCDE/GD(94)97.
- O'Flaherty EJ. 1993. Physiologically based models for bone-seeking elements. IV. Kinetics of lead disposition in humans. *Toxicol Appl Pharmacol* 118:16-29.
- Ogoshi K, Moriyama T, Nanzai Y. 1989. Decrease in the mechanical strength of bones of rats administered cadmium. *Arch Toxicol* 63:320-324.
- Ohba K, Okawa Y, Matsumoto Y, et al. 2007. A study of investigation of cadmium genotoxicity in rat bone cells using DNA microarray. *J Toxicol Sci* 32(1):107-109.
- Öhrvik H, Oskarsson A, Lundh T, et al. 2007. Impact of iron status on cadmium uptake in suckling piglets. *Toxicology* 240:15-24.

## 9. REFERENCES

- Ohsawa M, Takahashi K, Otsuka F. 1988. Induction of anti-nuclear antibodies in mice orally exposed to cadmium at low concentrations. *Clin Exp Immunol* 73:98-102.
- \*Ohta H, DeAngelis MV, Cherian MG. 1989. Uptake of cadmium and metallothionein by rat everted intestinal sacs. *Toxicol Appl Pharmacol* 101:62-69.
- \*Ohta H, Yamauchi Y, Nakakita M, et al. 2000. Relationship between renal dysfunction and bone metabolism disorder in male rats after long-term oral quantitative cadmium administration. *Ind Health* 38(4):339-355.
- \*Oldereid NB, Thomassen Y, Attramadal A, et al. 1993. Concentrations of lead, cadmium and zinc in the tissues of reproductive organs of men. *J Reprod Fertil* 99:421-425.
- Oldiges H, Glaser U. 1986. The inhalative toxicity of different cadmium compounds in rats. *Trace Elem Med* 3:72-75.
- Oldiges H, Hochrainer D, Glaser U. 1989. Long-term inhalation study with Wistar rats and four cadmium compounds. *Toxicol Environ Chem* 19:217-222.
- Olsson IM, Bensryd I, Lundh T, et al. 2002. Cadmium in blood and urine—impact of sex, age, dietary intake, iron status, and former smoking—association of renal effects. *Environ Health Perspect* 110(12):1185-1190.
- Omaye ST, Tappel AL. 1975. Effect of cadmium chloride on the rat testicular-soluble selenoenzyme, glutathione peroxidase. *Res Commun Chem Pathol Pharmacol* 12:695-711.
- O'Neil MJ, Heckelman PE, Koch CB, et al. 2006. Cadmium and cadmium compounds. *Merck Index*. 14th ed. Whitehouse Station, NJ: Merck & Co., Inc, 263, 264.
- Oo YK, Kobayashi E, Nogawa K, et al. 2000. Renal effects of cadmium intake of a Japanese general population in two areas unpolluted by cadmium. *Arch Environ Health* 55(2):98-103.
- O'Riordan ML, Hughes EG, Evans HJ. 1978. Chromosomal studies on blood lymphocytes of men occupationally exposed to cadmium. *Mutat Res* 58:305-311.
- Orlowski C, Piotrowski JK, Subdys JK, et al. 1998. Urinary cadmium as indicator of renal cadmium in humans: An autopsy study. *Hum Exp Toxicol* 17(6):302-306.
- Ormos G, Cseh J, Groszmann M, et al. 1985. Urinary  $\beta_2$ -microglobulin and retinol binding protein: Individual fluctuations in cadmium-exposed workers. *Toxicol Lett* 27:59-64.
- Ornes WH, Sajwan KS. 1993. Cadmium accumulation and bioavailability in coontail (*Ceratophyllum demersum* L.) plants. *Water Air Soil Pollut* 69:291-300.
- Osawa T, Kobayashi E, Okubo Y, et al. 2001. A retrospective study on the relation between renal dysfunction and cadmium concentration in rice in individual hamlets in the Jinzu River basin, Toyama Prefecture, Japan. *Environ Res* 86(Sect A):51-59.
- OSHA. 1990. Occupational exposure to cadmium; proposed rule. Occupational Safety and Health Administration. Code of Federal Regulations. 29 CFR 1910.

## 9. REFERENCES

- OSHA. 1991. ICP analysis of metal/metalloid particulates from solder operations. Occupational Safety and Health Administration. <http://www.osha.gov/dts/sltc/methods/inorganic/id206/id206.pdf>. May 14, 2008.
- OSHA. 2002a. Method ID-121: Metal and metalloid particulates in workplace atmospheres (atomic absorption). Occupational Safety and Health Administration. <http://www.osha.gov/dts/sltc/methods/inorganic/id121/id121.pdf>. May 14, 2008.
- OSHA. 2002b. Method ID-125G: Metal and metalloid particulates in workplace atmospheres (ICP analysis). Occupational Safety and Health Administration. <http://www.osha.gov/dts/sltc/methods/inorganic/id125g/id125g.html>. May 14, 2008.
- OSHA. 2004. Cadmium in workplace atmospheres. Occupational Safety and Health Administration. <http://www.osha.gov/dts/sltc/methods/inorganic/id189/id189.html>. August 18, 2008.
- OSHA. 2007a. Cadmium. Toxic and hazardous substances. Occupational Safety and Health Administration. Code of Federal Regulations. 29 CFR 1910.1027. <http://www.osha.gov/comp-links.html>. May 05, 2008.
- OSHA. 2007b. Cadmium. Toxic and hazardous substances. Occupational Safety and Health Administration. Code of Federal Regulations. 29 CFR 1915.1027. <http://www.osha.gov/comp-links.html>. May 05, 2008.
- OSHA. 2007c. Cadmium. Toxic and hazardous substances. Occupational Safety and Health Administration. Code of Federal Regulations. 29 CFR 1926.1127. <http://www.osha.gov/comp-links.html>. May 05, 2008.
- Ostapczuk P. 1993. Present potentials and limitations in the determination of trace elements by potentiometric stripping analysis. *Anal Chim Acta* 273:35-40.
- OTA. 1990. Neurotoxicity: Identifying and controlling poisons of the nervous system. Washington, DC: Office of Technology Assessment. OTABA438.
- Owen GM, Brozek J. 1966. Influence of age, sex and nutrition on body composition during childhood and adolescence. In: Falkner F, ed. *Human development*. Philadelphia, PA: WB Saunders, 222-238.
- Pacyna JM, Pacyna EG. 2001. An assessment of global and regional emissions of trace metals to the atmosphere from anthropogenic sources worldwide. *Environ Rev* 9(4):269-298.
- Pal R, Nath R, Gill KD. 1993a. Influence of ethanol on cadmium accumulation and its impact on lipid peroxidation and membrane bound functional enzymes (Na<sup>+</sup>, K<sup>+</sup>, -ATPase and acetylcholinesterase) in various regions of adult rat brain. *Neurochem Int* 23(5):451-458.
- Pal R, Nath R, Gill KD. 1993b. Lipid peroxidation and antioxidant defense enzymes in various regions of adult rat brain after co-exposure to cadmium and ethanol. *Pharmacol Toxicol* 73:209-214.
- Palus J, Rydzynski K, Dziubaltowska E, et al. 2003. Genotoxic effects of occupational exposure to lead and cadmium. *Mutat Res* 540(1):19-28.

## 9. REFERENCES

- Palmer KC, Mari F, Malian MS. 1986. Cadmium-induced acute lung injury: Compromised repair response following thyroidectomy. *Environ Res* 41:568-584.
- \*Parizek J. 1964. Vascular changes at sites of oestrogen biosynthesis produced by parenteral injection of cadmium salts: The destruction of placenta by cadmium salts. *J Reprod Fertil* 7:263-265.
- Park JD, Cherrington NJ, Klaassen CD. 2002. Intestinal absorption of cadmium is associated with divalent metal transporter 1 in rats. *Toxicol Sci* 68(2):288-294.
- Paton GR, Allison AC. 1972. Chromosome damage in human cell culture induced by metal salts. *Mutat Res* 16:332-336.
- Patwardhan JR, Finckh ES. 1976. Fatal cadmium-fume pneumonitis. *Med J Aust* 1:962-966.
- Paulson A. 1997. The transport and fate of Fe, Mn, Cu, Zn, Cd, Pb and SO<sub>4</sub> in a groundwater plume and in downstream surface waters in the Coeur d'Alene mining district, Idaho, USA. *Appl Geochem* 12:447-464.
- Pellizzari ED, Perritt RL, Clayton CA. 1999. National human exposure assessment survey (NHEXAS): Exploratory survey of exposure among population subgroups in EPA Region V. *J Expo Anal Environ Epidemiol* 9:49-55
- Perry HM, Erlanger MW, Gustafsson TO, et al. 1989. Reversal of cadmium-induced hypertension by D-myo-inositol-1,2,6-trisphosphate. *J Toxicol Environ Health* 28:151-159.
- Petering HG, Choudhury H, Stemmer KL. 1979. Some effects of oral ingestion of cadmium on zinc, copper and iron metabolism. *Environ Health Perspect* 28:97-106.
- Peters JL, Perlstein TS, Perry MJ, et al. 2010. Cadmium exposure in association with history of stroke and heart failure. *Environ Res* 110(2):199-206.
- Peterson DP, Huff EA, Bhattacharyya MH. 1991. Determination of cadmium in blood, plasma, and urine by electrothermal atomic absorption spectrophotometry after isolation by anion-exchange chromatography. *Anal Biochem* 192(2):434-440.
- Petersson Grawé K, Oskarsson A. 2000. Cadmium in milk and mammary gland in rats and mice. *Arch Toxicol* 73(10-11):519-527.
- \*Pharikal K, Das PC, Dey CD, et al. 1988. Tissue ascorbate as a metabolic marker in cadmium toxicity. *Int J Vitam Nutr Res* 58:306-311.
- Pierce FJ, Dowdy RH, Grigel DF. 1982. Concentrations of six trace metals in some major Minnesota Soil Series. *J Environ Qual* 11:416-422.
- Pirrone N, Keeler GJ, Nriagu JO, et al. 1996. Historical trends of airborne trace metals in Detroit from 1971 to 1992. *Water Air Soil Pollut* 88:145-165.
- Piscator M. 1966. Proteinuria in chronic poisoning. III. Electrophoretic and immunoelectrophoretic studies on urinary proteins from cadmium workers, with special reference to the excretion of low-molecular-weight proteins. *Arch Environ Health* 12:335-344.

## 9. REFERENCES

- Piscator M. 1972. Cadmium toxicity industrial and environmental experience. In: Proceedings 17th International Congress Occupational Health, Buenos Aires.
- Piscator M. 1984. Long-term observations on tubular and glomerula function in cadmium-exposed persons. *Environ Health Perspect* 54:175-179.
- Pleasant EW, Sandow ME, DeCandido S, et al. 1992. The effect of vitamin D3 and 1,25-dihydroxyvitamin D3 on the toxic symptoms of cadmium exposed rats. *Nutr Res* 12:1393-1403.
- Pleasant WE, Waslien C, Naughton BA, et al. 1993. Dietary modulation of the symptoms of cadmium toxicity in rats: Effects of vitamins A,C, D,DD hormone and fluoride. *Nutr Res* 13:839-850.
- Pless-Mulloli T, Boettcher M, Steiner M, et al. 1998.  $\alpha$ -1-Microglobulin: epidemiological indicator for tubular dysfunction induced by cadmium? *Occup Environ Med* 55:440-445.
- Poirier LA, Kasprzak KS, Hoover KL, et al. 1983. Effects of calcium and magnesium acetates on the carcinogenicity of cadmium chloride in Wistar rats. *Cancer Res* 43:4575-4581.
- \*Pond WG, Walker EF. 1972. Cadmium-induced anemia in growing rats: Prevention by oral or parenteral iron. *Nutr Rep Int* 5:365-370.
- Pond WG, Walker EF. 1975. Effect of dietary Ca and Cd level of pregnant rats on reproduction and on dam and progeny tissue mineral concentrations. *Proc Soc Exp Biol Med* 148:665-668.
- Potts AM, Simon FP, Tobias JM, et al. 1950. Distribution and fate of cadmium in the animal body. *Arch Ind Hyg* 2:175-188.
- Prigge E. 1978a. Early signs of oral and inhalative cadmium uptake in rats. *Arch Toxicol* 40:231-247.
- Prigge E. 1978b. Inhalative cadmium effects in pregnant and fetal rats. *Toxicology* 10:297-309.
- Prodan L. 1932. Cadmium poisoning: II. Experimental cadmium poisoning. *J Ind Hyg* 14:174-196.
- Putrament AH, Baranowska H, Ejchart A, et al. 1977. Manganese mutagenesis in yeast. VI.  $Mn^{2+}$  uptake, mitochondrial DNA replication and ER induction, comparison with other divalent cations. *Mol Gen Genet* 151:69-76.
- Racz P, Erdohelyi A. 1988. Cadmium, lead and copper concentrations in normal and senile cataractous human lenses. *Ophthalmic Res* 20:10-13.
- Radisch B, Luck W, Nau H. 1987. Cadmium concentrations in milk and blood of smoking mothers. *Toxicol Lett* 36:147-152.
- Ragan HA. 1977. Effects of iron deficiency on the absorption and distribution of lead and cadmium in rats. *J Lab Clin Med* 90(4):700-706.
- Rahola T, Aaran R-K, Miettinen JK. 1973. Retention and elimination of  $^{115}mCd$  in man. In: Health physics problems of internal contamination. Budapest: Akademia 213-218.

## 9. REFERENCES

- \*Rajanna B, Hobson M, Boykin M, et al. 1990. Effects of chronic treatment with cadmium on ATPases, uptake of catecholamines, and lipid peroxidation in rat brain synaptosomes. *Ecotoxicol Environ Saf* 20(1):36-41.
- Ramel C, Magnusson J. 1979. Chemical induction of nondisjunction in *Drosophila*. *Environ Health Perspect* 31:59-66.
- Reeves PG, Chaney RL. 2001. Mineral status of female rats affects the absorption and organ distribution of dietary cadmium derived from edible sunflower kernels (*Helianthus annuus* L.). *Environ Res* 85(3):215-225.
- Reeves PG, Chaney RL. 2002. Nutritional status affects the absorption and whole-body and organ retention of cadmium in rats fed rice-based diets. *Environ Sci Technol* 36:2684-2692.
- Reeves PG, Vanderpool RA. 1997. Cadmium burden of men and women who report regular consumption of confectionery sunflower kernels containing a natural abundance of cadmium. *Environ Health Perspect* 105(10):1098-104.
- \*Rehm S, Waalkes MP. 1988. Cadmium-induced ovarian toxicity in hamsters, mice, and rats. *Fundam Appl Toxicol* 10:635-647.
- Reimann C, de Caritat P, Halleraker JH, et al. 1997. Regional atmospheric deposition patterns of Ag, As, Bi, Cd, Hg, Mo, Sb and Ti in a 188,000 km<sup>2</sup> area in the European Arctic as displayed by terrestrial moss samples-long-range atmospheric transport vs. local impact. *Atmos Environ* 31(23):3887-3901.
- Renugadevi J, Prabu SM. 2010. Cadmium-induced hepatotoxicity in rats and the protective effect of naringenin. *Exp Toxicol Pathol* 62(2):171-181.
- Roberts CA, Clark JM. 1986. Improved determination of cadmium in blood and plasma by flameless atomic absorption spectroscopy. *Bull Environ Contam Toxicol* 36:496-499.
- Roberts CA, Clark JM. 1988. *In vivo* depression of reserve albumin binding capacity by cadmium: A preliminary evaluation. *Life Sci* 42:1369-1374.
- Roels H, Bernard AM, Cardenas A, et al. 1993. Markers of early renal changes induced by industrial pollutants. III. Application to workers exposed to cadmium. *Brit J Ind Med* 50:37-48.
- Roels HA, Hubermont G, Buchet JP, et al. 1978. Placental transfer of lead, mercury, cadmium, and carbon monoxide in women. III. Factors influencing the accumulation of heavy metals in the placenta, and the relationship between maternal concentration in the placenta and in maternal and cord blood. *Environ Res* 16:236-247.
- Roels HA, Lauwerys RR, Bernard AM, et al. 1991. Assessment of the filtration reserve capacity of the kidney in workers exposed to cadmium. *Br J Ind Med* 48:365-374.
- Roels HA, Lauwerys R, Buchet JB, et al. 1981a. Environmental exposure to cadmium and renal function of aged women in three areas of Belgium. *Environ Res* 24:117-130.
- Roels HA, Lauwerys R, Dardenne AN. 1983. The critical level of cadmium in human renal cortex: A reevaluation. *Toxicol Lett* 15:357-360.

## 9. REFERENCES

- Roels HA, Lauwerys RR, Buchet JP, et al. 1981b. *In vivo* measurement of liver and kidney cadmium in workers exposed to this metal: Its significance with respect to cadmium in blood and urine. *Environ Res* 26:217-240.
- Roels HA, Lauwerys RR, Buchet JP, et al. 1989. Health significance of cadmium induced renal dysfunction: A five year follow-up. *Br J Ind Med* 46:755-764.
- Roels HA, Van Assche FJ, Oversteyns M, et al. 1997. Reversibility of microproteinuria in cadmium workers with incipient tubular dysfunction after reduction of exposure. *Am J Ind Med* 31(5):645-652.
- Rohr G, Bauchinger M. 1976. Chromosome analysis in cell cultures of the Chinese hamster after application of cadmium sulfate. *Mutat Res* 40:125.
- Rose CS, Heywood PG, Costanzo RM. 1992. Olfactory impairment after chronic occupational cadmium exposure. *J Occup Med* 34(6):600-605.
- Roseman EF, Mills EL, Rutzke M, et al. 1994. Absorption of cadmium from water by North American zebra and quagga mussels (*Bivalvia dreissenidae*). *Chemosphere* 28(4):737-743.
- Roy WR, Krapac IG, Steele JD. 1993. Soil processes and chemical transport. *J Environ Qual* 22:537-543.
- Rozgaj R, Kasuba V, Fucic A. 2002. Genotoxicity of cadmium chloride in human lymphocytes evaluated by the comet assay and cytogenetic tests. *J Trace Elem Med Biol* 16:187-192.
- Rudzki E, Rebandel P, Stroinski J, et al. 1988. Reactions of cadmium. *Contact Dermatitis* 18:183-184.
- Rule KL, Comber SDW, Ross D, et al. 2006. Diffuse sources of heavy metals entering an urban wastewater catchment. *Chemosphere* 63:64-72.
- Rusch GM, O'Grodnick JS, Rinehart WE. 1986. Acute inhalation study in rat of comparative uptake, distribution and excretion of different cadmium containing materials. *Am Ind Hyg Assoc* 47:754-763.
- Rutzke M, Gutenmann WH, Williams SD, et al. 1993. Cadmium and selenium absorption by swiss chard grown in potted composted materials. *Bull Environ Contam Toxicol* 31:416-420.
- Ryu DY, Lee SJ, Park DW, et al. 2004. Dietary iron regulates intestinal cadmium absorption through iron transporters in mice. *Toxicol Lett* 152(1):19-25
- Saaranen M, Kantola M, Saarikoski S, et al. 1989. Human seminal plasma cadmium: Comparison with fertility and smoking habits. *Andrologia* 21:140-145.
- Sakata S, Iwami K, Enoki Y, et al. 1988. Effects of cadmium on *in vitro* and *in vivo* erythropoiesis: Erythroid progenitor cells (CFU-E) iron, and erythropoietin in cadmium-induced iron deficiency anemia. *Exp Hematol* 16:581-587.
- Saleh AI, Remail SW, Milad FM. 1993. Determination of cadmium in water samples by co-precipitation and neutron activation analysis. *J Radioanal Nucl Chem* 168:23-27.
- \*Salovsky P, Shopova V, Dancheva V, et al. 1992. Changes in antioxidant lung protection after single intratracheal cadmium acetate instillation in rats. *Human Exp Toxicol* 11:217-232.

## 9. REFERENCES

- Salpietro CD, Gangemi S, Minciullo PL, et al. 2002. Cadmium concentration in maternal and cord blood and infant birth weight: A study in healthy non-smoking women. *J Perinat Med* 30 (5):395-399.
- \*Sanders CL, Mahaffey JA. 1984. Carcinogenicity of single and multiple intratracheal instillations of cadmium oxide in the rat. *Environ Res* 33:227-233.
- Saplakoglu U, Iscan M. 1998. Sister chromatid exchanges in human lymphocytes treated *in vitro* with cadmium in G<sub>0</sub> and S phase of their cell cycles. *Mutat Res* 412:109-114.
- Saplakoglu U, Iscan M, Iscan M. 1997. DNA single-strand breakage in rat lung, liver and kidney after single and combined treatments of nickel and cadmium. *Mutat Res* 394(1-3):133-140.
- \*Sarhan MJ, Roels H, Lauwerys R, et al. 1986. Influence of manganese on the gastrointestinal absorption of cadmium in rats. *J Appl Toxicol* 6:313-316.
- Sasser LB, Jarboe GE. 1977. Intestinal absorption and retention of cadmium in neonatal rat. *Toxicol Appl Pharmacol* 41:423-431.
- Sasser LB, Jarboe GE. 1980. Intestine absorption and retention of cadmium in neonatal pigs compared to rats and guinea pigs. *J Nutr* 110:1641-1647.
- Satarug S, Nishijo M, Ujjin P, et al. 2005. Cadmium-induced nephropathy in the development of high blood pressure. *Toxicol Lett* 157(1):57-68.
- Sato K, Iwamasa T, Tsuru T, et al. 1978. An ultrastructural study of chronic cadmium chloride induced neuropathy. *Acta Neuropathol* 41:185-190.
- Sato R, Kido T, Honda R, et al. 2010. Seventeen-year observation on urinary cadmium and  $\beta_2$ -microglobulin in inhabitants after cessation of cadmium-exposure in Japan. *Bull Environ Contam Toxicol* 84(4):363-367.
- Satzger RD, Bonnin E, Fricke FL. 1984. Development of a quality assurance program for determination of ultratrace background levels and cadmium in raw agricultural crops by differential pulse anodic stripping voltammetry. *J Assoc Off Anal Chem* 67:1138-1140.
- Satzger RD, Clow CS, Bonnin E, et al. 1982. Determination of background levels of lead and cadmium in raw agricultural crops by using differential pulse anodic stripping voltammetry. *J Assoc Off Anal Chem* 65:987-991.
- Saxena DK, Murthy RC, Chandra SV. 1986. Embryotoxic and teratogenic effects of interaction of cadmium and lindane in rats. *Acta Pharmacol Toxicol* 59:175-178.
- Saxena DK, Murthy RC, Singh C, et al. 1989. Zinc protects testicular injury induced by concurrent exposure to cadmium and lead in rats. *Res Commun Chem Pathol Pharmacol* 64:317-329.
- Schafer L, Andersen O, Nielsen JB. 1986. Effects of dietary factors on gastrointestinal Cd absorption in mice. *Acta Pharmacol Toxicol (Copenh)* 59(Suppl 7):549-552.

## 9. REFERENCES

- Schafer SG, Schwegler U, Schumann K. 1990. Retention of cadmium in cadmium-naive normal and iron-deficient rats as well as in cadmium-induced iron-deficient animals. *Ecotoxicol Environ Saf* 20:71-81.
- Schiestl RH, Gietz RD, Mehta RD, et al. 1989. Carcinogens induce introchromosomal recombination in yeast. *Carcinogenesis* 10:1445-1455.
- Schmitt CJ, Brumbaugh WG. 1990. National contaminant biomonitoring program: Concentrations of arsenic, cadmium, copper, lead, mercury, selenium, and zinc in U.S. freshwater fish, 1976-1984. *Arch Environ Contam Toxicol* 19:731-747.
- Schroeder HA, Mitchener M. 1971. Toxic effects of trace elements on the reproduction of mice and rats. *Arch Environ Health* 23:102-106.
- Schroeder HA, Balassa JJ, Vinton WH. 1964. Chromium, lead, cadmium, nickel, and titanium in mice: Effect on mortality, tumors, and tissue levels. *J Nutr* 83:239-250.
- Schroeder HA, Balassa JJ, Vinton WH. 1965. Chromium, cadmium, and lead in rats: Effects on life span, tumors, and tissue levels. *J Nutr* 86:51-66.
- \*Schuhmacher M, Bosque MA, Domingo JL, et al. 1994. Effects of chronic lead and cadmium exposure on blood pressure in occupationally exposed workers. *Biol Trace Elem Res* 41:269-278.
- Schulte-Lobbert FJ, Bohn G. 1977. Determination of cadmium in human milk during lactation. *Arch Toxicol* 37:155-157.
- Schulte-Schrepping KH, Piscator M. 2002. Cadmium and cadmium compounds. Ullmann's encyclopedia of industrial chemistry. Wiley-VCH Verlag GmbH & Co. KGaA. [http://www.mrw.interscience.wiley.com/emrw/9783527306732/ueic/article/a04\\_499/current/pdf](http://www.mrw.interscience.wiley.com/emrw/9783527306732/ueic/article/a04_499/current/pdf). April 29, 2008.
- Schutte R, Nawrot TS, Richart T, et al. 2008. Bone resorption and environmental exposure to cadmium in women: A population study. *Environ Health Perspect* 116:777-783.
- Schwartz GG, Il'yasova D, Ivanova A. 2003. Urinary cadmium, impaired fasting glucose, and diabetes in the NHANES III. *Diabetes Care* 26(2):468-470.
- Scott MC, Chettle DR. 1986. *In vivo* elemental analysis in occupational medicine. *Scand J Work Environ Health* 12:81-96.
- Scott R, Haywood JK, Boddy K, et al. 1980. Whole body calcium deficit in cadmium-exposed workers with hypercalciuria. *Urology* 15:356-359.
- Scott R, Patterson PJ, Burns R, et al. 1978. Hypercalciuria related to cadmium exposure. *Urology* 11:462-465.
- Seidal K, Jörgensen N, Elinder C. 1993. Fatal cadmium induced pneumonitis. *Scand J Work Environ Health* 19:429-431.
- Selypes A, Serenyi P, Boldog I, et al. 1992. Acute and 'long term' genotoxic effects of CdCl<sub>2</sub> on testes of mice. *J Toxicol Environ Health* 36(4):401-409.

## 9. REFERENCES

- Sendelbach LE, Klaassen CD. 1988. Kidney synthesizes less metallothionein than liver in response to cadmium chloride and cadmium-metallothionein. *Toxicol Appl Pharmacol* 92:95-102.
- Seoane AI, Dulout FN. 2001. Genotoxic ability of cadmium, chromium and nickel salts studied by kinetochore staining in the cytokinesis-blocked micronucleus assay. *Mutat Res* 490(2):99-106.
- Setchell BP, Waites GMH. 1975. The blood-testis barrier. In: Creep RO, Astwood EB, Geiger SR, eds. *Handbook of physiology: Endocrinology V*. Washington, DC: American Physiological Society, 143-172.
- Shaham J, Rosenboim J, Ophire D, et al. 1993. The correlation between blood and urine level of cadmium and nasal and paranasal sinuses disorders. *Int Arch Occup Environ Health* 65:S91-S93.
- Shaikh ZA. 1982. Metallothionein as a storage protein for cadmium: Its toxicological implications. *Dev Toxicol Environ Sci* 9:69-76.
- Shaikh ZA, Smith JC. 1976. The biosynthesis of metallothionein rat liver and kidney after administration of cadmium. *Chem Biol Interact* 15:327-336.
- Shaikh ZA, Smith JC. 1980. Metabolism of orally ingested cadmium in humans. In: Holmstedt B, Lauwerys R, Mercier M, et al., eds. *Mechanisms of toxicity and hazard evaluation*. New York, NY: Elsevier/North-Holland Biomedical Press, 569-574.
- Shaikh ZA, Smith LM. 1984. Biological indicators of cadmium exposure and toxicity. *Experientia* 40:36-43.
- Shaikh ZA, Tang W. 1999. Protection against chronic cadmium toxicity by glycine. *Toxicology* 132(2-3):93-103.
- Shaikh ZA, Harnett KM, Perlin SA, et al. 1989. Chronic cadmium intake results in dose-related excretion of metallothionein in urine. *Experientia* 45:146-148.
- Shaikh ZA, Jordan SA, Tang W. 1999a. Protection against chronic cadmium toxicity by calorie restriction. *Toxicology* 133:93-103.
- Shaikh ZA, Jordan SA, Tewari PC. 1993. Cadmium disposition and methallothionein induction in mice: Strain, sex, age, and dose dependent differences. *Toxicology* 80:51-70.
- Shaikh ZA, Tohyama C, Noland CV. 1987. Occupational exposure to cadmium: Effect on metallothionein and other biological indices of exposure and renal function. *Arch Toxicol* 59:360-364.
- Shaikh ZA, Vu TI, Zaman K. 1999b. Oxidative stress as a mechanism of chronic cadmium-induced hepatotoxicity and renal toxicity and protection by antioxidants. *Toxicol Appl Pharmacol* 154:256-263.
- Shaikh ZA, Zaman K, Tang W, et al. 1999c. Treatment of chronic cadmium nephrotoxicity by *N*-acetyl cystine. *Toxicol Lett* 104(1-2):137-142.
- Shanbaky MM. 1973. A radiotracer distribution study of repeated administration of cadmium in the Albino rat. M.S. Thesis, Purdue University.

## 9. REFERENCES

- Shank KE, Vetter RJ, Ziemer PL. 1977. A mathematical model of cadmium transport in a biological system. *Environ Res* 13:209-214.
- Sharma RP, Kjellström T, McKenzie JM. 1983. Cadmium in blood and urine among smokers and nonsmokers with high cadmium intake via food. *Toxicology* 29:163-171.
- Sharma RP, McKenzie JM, Kjellström T. 1982. Analysis of submicrogramme levels of cadmium in whole blood, urine, and hair by graphite furnace atomic absorption spectroscopy. *J Anal Toxicol* 6:135-138.
- Sharon IM. 1988. The significance of teeth in pollution detection. *Perspect Biol Med* 32:124-131.
- Shevchenko V, Lisitzin A, Vinogradova A, et al. 2003. Heavy metals in aerosols over the seas of the Russian Arctic. *Sci Total Environ* 306:11-25.
- Shigematsu I. 1984. The epidemiological approach to cadmium pollution in Japan. *Ann Acad Med Singapore*. 13:231-236.
- Shimbo S, Zhang Z, Moon C, et al. 2000. Correlation between urine and blood concentrations, and dietary intake of cadmium and lead among women in the general population of Japan. *Int Arch Occup Environ Health* 73:163-170.
- Shimizu M, Morita S. 1990. Effects of fasting on cadmium toxicity, glutathione metabolism, and metallothionein synthesis in rats. *Toxicol Appl Pharmacol* 103:28-39.
- Shimizu A, Kobayashi E, Suwazono Y, et al. 2006. Estimation of benchmark doses for urinary cadmium based on  $\beta_2$ -microglobulin excretion in cadmium-polluted regions of the Kakehashi River basin, Japan. *Int J Environ Health Res* 16(5):329-337.
- Shin M, Paek D, Yoon C. 2011. The relationship between the bone mineral density and urinary cadmium concentration of residents in an industrial complex. *Environ Res* 111(1):101-109.
- Shipman DL. 1986. Cadmium food poisoning in a Missouri school. *J Environ Health* 49:89.
- Shiraishi Y, Yoshida TH. 1972. Chromosomal abnormalities in cultured leucocyte cells from Itai-itai disease patients. *Proc Japan Acad* 48:248-251.
- Shiraishi Y, Kurahashi H, Yoshida TH. 1972. Chromosomal aberrations in cultured human leucocytes induced by cadmium sulfide. *Proc Japan Acad* 48:133-137.
- Shiwen C, Lin Y, Zhineng H, et al. 1990. Cadmium exposure and health effects among residents in an irrigation area with ore dressing wastewater. *Sci Total Environ* 90:67-73.
- \*Shukla GS, Hussain T, Srivastava RS, et al. 1988a. Diagnostic significance of erythrocyte antioxidative enzymes in cadmium toxicity. *Biochem Arch* 4:429-436.
- Sidhu M, Sharma M, Bhatia M, et al. 1993. Effect of chronic cadmium exposure on glutathione S-transferase and glutathione peroxidase activities in Rhesus monkey the role of selenium. *Toxicology* 83:203-213.

## 9. REFERENCES

- SI/EPA. 2007. Cadmium. The Science Inventory. U.S. Environmental Protection Agency. <http://cfpub.epa.gov/si/sciencequery.cfm>. April 23, 2008.
- Sikorski R, Paszkowski T, Radomanski T, et al. 1989. Cadmium contamination of early human milk. *Gynecol Obstet Invest* 27:91-93.
- Sileo L, Beyer WN. 1985. Heavy metals in white-tailed deer living near a zinc smelter in Pennsylvania. *J Wildlife Diseases* 21:289-296.
- \*Simmer K, Carlsson L, Thompson RPH. 1992. The effects of cadmium on zinc in the pregnant guinea pig. *Trace Elem Med* 9(3):109-112.
- Singh BR. 1994. Trace element availability to plants in agricultural soils, with special emphasis on fertilizer inputs. *Environ Rev* 2:133-146.
- Singh PK, Jones MM, Kostial K, et al. 1996. *In vivo* cadmium mobilization by three novel bis (carbodithioates). *Chem Res Toxicol* 9(1):313-317.
- \*Singh PK, Jones SG, Gale GR, et al. 1990. Selective removal of cadmium from aged hepatic and renal deposits: N-substituted taloocamine dithiocarbamates as cadmium mobilizing agents. *Chem Biol Interact* 74:79-91.
- Skerfving S, Nilsson U. 1992. Assessment of accumulated body burden of metals. *Toxicol Lett* 64/65:17-24.
- Skog E, Wahlberg JE. 1964. A comparative investigation of the percutaneous absorption of metal compounds in the guinea pig by means of the radioactive isotopes: <sup>51</sup>Cr, <sup>58</sup>Co, <sup>65</sup>Zn, <sup>110m</sup>Ag, <sup>115m</sup>Cd, <sup>203</sup>Hg. *J Invest Dermatol* 43:187-192.
- Smith JP, Smith JC, McCall AJ. 1960. Chronic poisoning from cadmium fume. *J Pathol Bacteriol* 80:287-296.
- \*Smith NJ, Topping MD, Stewart JD, et al. 1986. Occupational cadmium exposure in jig solderers. *Br J Ind Med* 43:663-666.
- Smith SR. 1994. Effect of soil pH on availability to crops of metals in sewage sludge-treated soils. II. Cadmium uptake by crops and implications for human dietary intake. *Environ Pollut* 86:5-13.
- Smith TJ, Anderson RJ, Reading JC. 1980. Chronic cadmium exposures associated with kidney function effects. *Am J Ind Med* 1:319-337.
- Smith TJ, Petty TL, Reading JC, et al. 1976. Pulmonary effects of chronic exposure to airborne cadmium. *Am Rev Resp Dis* 114:161-169.
- Snider GL, Hayes JA, Korthy AL, et al. 1973. Centrilobular emphysema experimentally induced by cadmium chloride aerosol. *Am Rev Resp Dis* 108:40-48.
- \*Snider GL, Lucey EC, Faris B, et al. 1988. Cadmium-chloride-induced air-space enlargement with interstitial pulmonary fibrosis is not associated with destruction of lung elastin. Implications for the pathogenesis of human emphysema. *Am Rev Respir Dis* 137:918-923.

## 9. REFERENCES

- Sorahan T. 1987. Mortality from lung cancer among a cohort of nickel cadmium battery workers: 1946-1984. *Br J Ind Med* 44:803-809.
- Sorahan T, Esmen NA. 2004. Lung cancer mortality in UK nickel-cadmium battery workers, 1947-2000. *Occup Environ Med* 61(2):108-116.
- Sorahan T, Lancashire R. 1994. Lung cancer findings from the NIOSH study of United States cadmium recovery workers: A cautionary note. *Occup Environ Med* 51(2):139-140.
- Sorahan T, Lancashire RJ. 1997. Lung cancer mortality in a cohort of workers employed at a cadmium recovery plant in the United States: An analysis with detailed job histories. *Occup Environ Med* 54(3):194-201.
- Sorahan T, Waterhouse JAH. 1983. Mortality study of nickel-cadmium battery workers by the method of regression models in life tables. *Br J Ind Med* 40:293-300.
- \*Sorahan T, Waterhouse JAH. 1985. Cancer of prostate among nickel-cadmium battery workers. *Lancet* 1(8426):459.
- Sorahan T, Lister A, Gilthorpe MS, et al. 1995. Mortality of copper cadmium alloy workers with special reference to lung cancer and non-malignant diseases of the respiratory system, 1946-92. *Occup Environ Med* 52(12):804-12.
- Sorell TL, Graziano JH. 1990. Effect of oral cadmium exposure during pregnancy on maternal and fetal zinc metabolism in the rat. *Toxicol Appl Pharmacol* 102:537-545.
- Sporn A, Dinu I, Stoenescu L. 1970. Influence of cadmium administration on carbohydrate and cellular energetic metabolism in the rat liver. *Rev Roum Biochim* 7:299-305.
- Sprague JB. 1986. Toxicity and tissue concentrations of lead, zinc, and cadmium for marine molluscs and crustaceans. Research Triangle Park, NC: International Lead Zinc Research Organization, Inc., 1-74.
- Squibb KS, Pritchard JB, Fowler BA. 1984. Cadmium-metallothionein nephropathy: Relationships between ultrastructural/biochemical alterations and intracellular cadmium binding. *J Pharmacol Exp Ther* 229:311-321.
- SRI. 2007. Directory of chemical producers. United States of America. Menlo Park, CA: SRI Consulting, 503; 799-800.
- \*Srivastava RC, Ahmad I, Kaur G, et al. 1988. Alterations in the metabolism of endogenous trace metals due to cadmium, manganese and nickel effect of partial hepatectomy. *J Environ Sci Health A23*:95-101.
- Stacey NH, Craig G, Muller L. 1988. Effects of cadmium on natural killer and killer cell functions *in vivo*. *Environ Res* 45:71-77.
- Staessen J, Bulpitt CJ, Roels H, et al. 1984. Urinary cadmium and lead and their relationship to blood pressure in a population with low average exposure. *Br J Ind Med* 4:241-248.
- Staessen J, Kuznetsova T, Roels HA, et al. 2000. Exposure to cadmium and conventional and ambulatory blood pressures in a prospective population study. *Am J Hypertens* 13(2):146-156.

## 9. REFERENCES

- Staessen J, Lauwerys R. 1993. Health effects of environmental exposure to cadmium in a population study. *J Hum Hypertens* 7:195-199.
- Staessen JA, Roels HA, Emelianov D, et al. 1999. Environmental exposure to cadmium, forearm bone density, and risk of fractures: Prospective population study. *Lancet* 353(9159):1140-1144.
- Stayner L, Smith R, Schorr T, et al. 1993. Letter to the editor. *Ann Epidemiol* 3(1):114-116.
- Stayner L, Smith R, Thun M, et al. 1992a. A dose-response analysis and quantitative assessment of lung cancer risk and occupational cadmium exposure. *Ann Epidemiol* 2(3):177-194.
- \*Stayner L, Smith R, Thun M, et al. 1992b. A quantitative assessment of lung cancer risk and occupational cadmium exposure. In: Nordberg GF, Herber RFM, Alessio L, eds. *Cadmium in the human environment: Toxicity and carcinogenicity*. Lyon, France: International Agency for Research on Cancer, 447-455.
- Steenkamp PA, Coetzee PP. 1994. Simultaneous determination of toxic heavy metals in organic matrices using reversed-phase high-performance liquid chromatography. *S Afr J Chem* 47(1):29-32.
- Steibert E, Krol B, Sowa B, et al. 1984. Cadmium-induced changes in the histoenzymatic activity in liver, kidney and duodenum of pregnant rats. *Toxicol Lett* 20:127-132.
- Steinnes E, Friedland AJ. 2006. Metal contamination of natural surface soils from long-range atmospheric transport: Existing and missing knowledge. *Environ Rev* 14:169-186.
- Stowe HD, Wilson M, Goyer RA. 1972. Clinical and morphological effects of oral cadmium toxicity in rabbits. *Arch Pathol* 94:389-405.
- Stroh A. 1993. Determination of Pb and Cd in whole blood using isotope dilution ICP-MS. *Atom Spectrosc* 14(5):141-143.
- Struempfer RE, Larson GE, Rimland B. 1985. Hair mineral analysis and disruptive behavior in clinically normal young men. *J Learn Disabil* 18:609-612.
- Stutz DR, Janusz SJ. 1988. *Hazardous materials injuries: A handbook for pre-hospital care*. 2nd edition. Beltsville, MD: Bradford Communications Corporation, 21, 228-229.
- Subramanian KS, Meranger JC. 1981. A rapid electrothermal atomic absorption spectrophotometric method for cadmium and lead in human whole blood. *Clin Chem* 27:1866-1871.
- Subramanian KS, Meranger JC, MacKeen JE. 1983. Graphite furnace atomic absorption spectrometry with matrix modification for determination of cadmium and lead in human urine. *Anal Chem* 55:1064-1067.
- \*Sugawara N, Sugawara C. 1987. Role of mucosal metallothionein preinduced by oral Cd or Zn on the intestinal absorption of a subsequent Cd dose. *Bull Environ Contam Toxicol* 38:295-299.
- Sumino K, Hayakawa K, Shibata T, et al. 1975. Heavy metals in normal Japanese tissues. *Arch Environ Health* 30:487-494.

## 9. REFERENCES

- Suresh A, Sivaramakrishna B, Radhakrishnaiah K. 1993. Patterns of cadmium accumulation in the organs of fry and fingerlings of freshwater fish *Cyprinus carpio* following cadmium exposure. *Chemosphere* 26(5):945-953.
- Suter KE. 1975. Studies on the dominant-lethal and fertility effects of the heavy metal compounds methylmercuric hydroxide, mercuric chloride, and cadmium chloride in male and female mice. *Mutat Res* 30:365-374.
- Sutou S, Yamamoto K, Sendota H, et al. 1980. Toxicity, fertility, teratogenicity, and dominant lethal tests in rats administered cadmium subchronically. III. Fertility, teratogenicity, and dominant lethal tests. *Ecotoxicol Environ Saf* 4:51-56.
- Suwazono Y, Kobayashi E, Okubo Y, et al. 2000. Renal effects of cadmium exposure in cadmium nonpolluted areas in Japan. *Environ Res* 84(Sect A):44-55.
- Suwazono Y, Nogawa K, Uetani M, et al. 2011a. Application of the hybrid approach for estimating the benchmark dose of urinary cadmium for adverse renal effects in the general population of Japan. *J Appl Toxicol* 31(1):89-93.
- Suwazono Y, Nogawa K, Uetani M, et al. 2011b. Application of the hybrid approach to the benchmark dose of urinary cadmium as the reference level for renal effects in cadmium polluted and non-polluted areas in Japan. *Environ Res* 111(2):312-314.
- Suwazono Y, Nogawa K, Uetani M, et al. 2011c. Reassessment of the threshold of urinary cadmium by using hybrid approach in a cadmium non-polluted area in Japan. *Int J Hyg Environ Health* 214(2):175-178.
- Suwazono Y, Saloman S, Vahter M, et al. 2006. Benchmark dose for cadmium-induced renal effects in humans. *Environ Health Perspect* 114:1072-1076.
- Suwazono Y, Uetani M, Akesson A, et al. 2010. Recent applications of benchmark dose method for estimation of reference cadmium exposure for renal effects in man. *Toxicol Lett* 198(1):40-43.
- Suzuki CAM, Cherian MG. 1987. Renal toxicity of cadmium-metallothionein and enzymuria in rats. *J Pharmacol Exp Ther* 240:314-319.
- Swaddiwudhipong, W; Mahasakpan, P; Limpatanachote, P; et al. 2010. Correlations of urinary cadmium with hypertension and diabetes in persons living in cadmium-contaminated villages in northwestern Thailand: A population study. *Environ Res* 110(6):612-616.
- Swaddiwudhipong, W; Mahasakpan, P; Limpatanachote, P; et al. 2011. An association between urinary cadmium and urinary stone disease in persons living in cadmium-contaminated villages in northwestern Thailand: A population study. *Environ Res* 111(4):579-583.
- Sweet CW, Vermette SJ, Landsberger S. 1993. Sources of toxic trace elements in urban air in Illinois. *Environ Sci Technol* 27(12):2502-2510.
- Sweet CW, Weiss A, Vermette SJ. 1998. Atmospheric deposition of trace metals at three sites near the Great Lakes. *Water Air Soil Pollut* 103:423-439.

## 9. REFERENCES

Swiergosz-Kowalewska R. 2001. Cadmium distribution and toxicity in tissues of small rodents. *Microsc Res Tech* 55(3):208-222.

\*Szymanska JA, Bem EM, Piotrowski JK, et al. 1989. Renal binding of cadmium in the rat following intragastric exposure. *Toxicology* 55:339-348.

Takagi Y, Matsuda S, Imai S, et al. 1988. Survey of trace elements in human nails: An international comparison. *Bull Environ Contam Toxicol* 41:690-695.

\*Takebayashi S, Harada T, Kamura S, et al. 1987. Cadmium-induced osteopathy: Clinical and autopsy findings of four patients. *Appl Pathol* 5:190-197.

Takenaka S, Karg E, Kreyling WG, et al. 2004. Fate and toxic effects of inhaled ultrafine cadmium oxide particles in the rat lung. *Inhal Toxicol* 16:83-92.

Takenaka S, Oldiges H, Konig H, et al. 1983. Carcinogenicity of cadmium chloride aerosols in Wistar rats. *J Natl Cancer Inst* 70:367-373.

Tandon L, Ni BF, Ding XX, et al. 1994. RNAA for arsenic, cadmium, copper, and molybdenum in CNS tissues from subjects with age related neurodegenerative disease. *J Radionanal Nucl Chem* 179(2):331-339.

Tang XM, Chen XQ, Zhang JX, et al. 1990. Cytogenetic investigation in lymphocytes of people living in cadmium-polluted areas. *Mutat Res* 241:243-249.

Teeyakasem W, Nishijo M, Honda R, et al. 2007. Monitoring of cadmium toxicity in a Thai population with high-level environmental exposure. *Toxicol Lett* 169:185-195.

Telišman S, Cvitkovic P, Jurasovic J, et al. 2000. Semen quality and reproductive endocrine function in relation to biomarkers of lead, cadmium, zinc, and copper in men. *Environ Health Perspect* 108:45-53.

Tellez-Plaza M, Navas-Acien A, Crainiceanu CM, et al. 2008. Cadmium exposure and hypertension in the 1999-2004 National Health and Nutrition Examination Survey (NHANES). *Environ Health Perspect* 116(1):51-56.

Tellez-Plaza, M; Navas-Acien, A; Crainiceanu, CM; et al. 2010. Cadmium and peripheral arterial disease: Gender differences in the 1999-2004 US National Health and Nutrition Examination Survey. *Am J Epidemiol* 172(6):671-681.

Terracio L, Nachtigal M. 1988. Oncogenicity of rat prostate cells transformed *in vitro* with cadmium chloride. *Arch Toxicol* 61:450-456.

Tewari PC, Jain VK, Ashquin M, et al. 1986b. Influence of protein deficiency on cadmium toxicity in rats. *Arch Environ Contam Toxicol* 15:409-415.

Thatcher RW, Lester ML, McAlaster R, et al. 1982. Effects of low levels of cadmium in lead on cognitive functioning in children. *Arch Environ Health* 37:159-166.

Thomas K, Colborn T. 1992. Organochlorine endocrine disruptors in human tissue. In: Colborn T, Clement C, eds. *Chemically induced alterations in sexual and functional development: The wildlife/human connection*. Princeton, NJ: Princeton Scientific Publishing, 365-394.

## 9. REFERENCES

- Thomas, LD; Hodgson, S; Nieuwenhuijsen, M; et al. 2009. Early kidney damage in a population exposed to cadmium and other heavy metals. *Environ Health Perspect* 117(2):181-184.
- Thornton I. 1992. Sources and pathways of cadmium in the environment. In: Nordberg GF, Herber RFM, Alessio L, eds. *Cadmium in the human environment: Toxicity and carcinogenicity*. IARC Scientific Publications No. 118. Lyon, France: International Agency for Research on Cancer, 149-162.
- Thun MJ, Osorio AM, Schober S, et al. 1989. Nephropathy in cadmium workers: Assessment of risk from airborne occupational exposure to cadmium. *Br J Ind Med* 46:689-697.
- Thun MJ, Schnorr TM, Smith A, et al. 1985. Mortality among a cohort of U.S. cadmium production workers--an update. *J Natl Cancer Inst* 74:325-333.
- Toffoletto F, Apostoli P, Ghezzi I, et al. 1992. Ten-year follow-up of biological monitoring of cadmium-exposed workers. In: Nordberg GF, Herber RFM, Alessio L, eds. *Cadmium in the human environment: Toxicity and carcinogenicity*. Geneva: International Agency for Research on Cancer, 107-111
- Tohyama C, Kobayashi E, Saito H, et al. 1986. Urinary microglobulin as an indicator protein or renal tubular dysfunction caused by environmental cadmium exposure. *J Appl Toxicol* 6:171-178.
- Tohyama C, Mitane Y, Kobayashi E, et al. 1988. The relationships of urinary metallothionein with other indicators of renal dysfunction in people living in a cadmium-polluted area in Japan. *J Appl Toxicol* 8:15-21.
- Tohyama C, Shaikh ZA, Ellis KJ, et al. 1981. Metallothionein excretion in urine upon cadmium exposure: Its relationship with liver and kidney cadmium. *Toxicology* 22:181-191.
- Tomera JF, Harakal C. 1988. Effects of cadmium ingestion on blood pressure and ventricular mass in rabbits. *Drug Nutr Interact* 5:365-72.
- Topping MD, Forster HW, Dolman C, et al. 1986. Measurement of urinary retinol-binding protein by enzyme-linked immunosorbent assay, and its application to detection of tubular proteinuria. *Clin Chem* 32:1863-1866.
- Townshend RH. 1982. Acute cadmium pneumonitis: A 17-year follow-up. *Br J Ind Med* 39:411-412.
- Trevisan A, Gardin C. 2005. Nephrolithiasis in a worker with cadmium exposure in the past. *Int Arch Occup Environ Health* 78(8):670-672.
- TRI09. 2011. TRI explorer: Providing access to EPA's toxics release inventory data. Washington, DC: Office of Information Analysis and Access. Office of Environmental Information. U.S. Environmental Protection Agency. Toxics Release Inventory. <http://www.epa.gov/triexplorer/>. September 19, 2011.
- Truska P, Rosival L, Balazova G, et al. 1989. Blood and placental concentrations of cadmium, lead, and mercury in mothers and their newborns. *J Hyg Epidemiol Microbiol Immunol* 33:141-147.
- Trzcinka-Ochocka M, Jakubowski M, Halatek T, et al. 2002. Reversibility of microproteinuria in nickel-cadmium battery workers after removal from exposure. *Int Arch Occup Environ Health* 75(Suppl):S101-S106.

## 9. REFERENCES

- Trzcinka-Ochocka M, Jakubowski M, Razniewska G, et al. 2004. The effects of environmental cadmium exposure on kidney function: The possible influence of age. *Environ Res* 95(2):143-150.
- Trzcinka-Ochocka, M; Jakubowski, M; Szymczak, W; et al. 2010. The effects of low environmental cadmium exposure on bone density. *Environ Res* 110(3):286-293.
- Tsukahara T, Ezaki T, Moriguchi J, et al. 2003. No significant effect of iron deficiency on cadmium body burden or kidney dysfunction among women in the general population in Japan. *Int Arch Occup Environ Health* 76:275-281.
- \*Tsuritani I, Honda R, Ishizaki M, et al. 1994. Serum bone-type alkaline phosphatase activity in women living in a cadmium-polluted area. *Toxicol Lett* 71:209-216.
- Tsvetkova RP. 1970. [Materials on the study of the influence of cadmium compounds on the generative function.] *Gig Tr Prof Zabol* 14:31-33. (Russian)
- Tulley RT, Lehmann HP. 1982. Method for the simultaneous determination of cadmium and zinc in whole blood by atomic absorption spectrophotometry and measurement in normotensive and hypertensive humans. *Clinica Chimica Acta* 122:189-202.
- UN. 1985. Treatment and disposal methods for waste chemicals. International Register of Potentially Toxic Chemicals. Geneva, Switzerland: United Nations Environment Programme.
- Uno T, Kobayashi E, Suwazono Y, et al. 2005. Health effects of cadmium exposure in the general environment in Japan with special reference to the lower limit of the benchmark dose as the threshold level of urinary cadmium. *Scand J Work Environ Health* 31(4):307-315.
- U.S. Bureau of Mines. 1990. Mineral industry surveys. Cadmium in 1989. Washington, DC: U.S. Bureau of Mines, 1-5.
- USDA. 2012. Table 5. U.S. consumption of selected phosphate and potash fertilizers. Economic research service. United States Department of Agriculture. <http://www.ers.usda.gov/data-products/fertilizer-use-and-price.aspx#26720>. September 11, 2012.
- USGS. 1985. Cadmium, atomic absorption spectrometric, direct. In: Fishman MJ, Friedman LC, eds. *Methods for the determination of inorganic substances in water and fluvial sediments, techniques of water-resources investigations of the United States Geological Survey, Book 5, Chapter A1*. U.S. Geological Survey. [infotrek.er.usgs.gov/pls/nemi\\_pdf/nemi\\_data.download\\_pdf?p\\_file=1333](http://infotrek.er.usgs.gov/pls/nemi_pdf/nemi_data.download_pdf?p_file=1333). May 14, 2008.
- USGS. 1996. Methods of analysis by the U.S. Geological Survey National Water Quality Laboratory-Preparation procedure for aquatic biological material determined for trace metals. Denver, CO: U.S. Geological Survey. Open-File Report 96-362. <http://pubs.er.usgs.gov/usgspubs/ofr/ofr96362>. May 26, 2008.
- USGS. 1997. Minerals yearbook: Cadmium. Reston, Virginia: U.S. Geological Survey.
- USGS. 1998a. Methods of analysis by the U.S. Geological Survey National Water Quality Laboratory-Determination of elements in whole-water digests using inductively coupled plasma-optical emission spectrometry and inductively coupled plasma-mass spectrometry. Denver, CO: U.S. Geological Survey. Open-File Report 98-165. <http://pubs.er.usgs.gov/usgspubs/ofr/ofr98165>. May 26, 2008.

## 9. REFERENCES

- USGS. 1998b. Water quality in the Hudson River basin. New York and adjacent states, 1992-1995. U.S. Geological Survey. Circular 1165. <http://ny.water.usgs.gov/projects/hdsn/report/Circular1165.pdf>. April 17, 2008.
- USGS. 1999. Mineral commodity summary: Cadmium. Reston, Virginia: U.S. Geological Survey.
- USGS. 2007. 2006 minerals yearbook. Cadmium. U.S. Geological Survey. <http://minerals.usgs.gov/minerals/pubs/commodity/cadmium/myb1-2006-cadmi.pdf>. April 29, 2008.
- USGS. 2008. Cadmium. Mineral commodity summaries. U.S. Geological Survey. <http://minerals.usgs.gov/minerals/pubs/commodity/cadmium/mcs-2008-cadmi.pdf>. April 29, 2008.
- Vahter M, Berglund M, Nermell B, et al. 1996. Bioavailability of cadmium from shellfish and mixed diet in women. *Toxicol Appl Pharmacol* 136(2):332-341.
- Valois AA, Webster WS. 1989. The choroid plexus as a target site for cadmium toxicity following chronic exposure in the adult mouse: An ultrastructural study. *Toxicology* 55:193-205.
- Valverde M, Fortoul TI, Diaz-Barriga F, et al. 2000. Induction of genotoxicity by cadmium chloride inhalation in several organs of CD-1 mice. *Mutagenesis* 15(2):109-114.
- Vanderpool RA, Reeves PG. 2001. Cadmium absorption in women fed processed edible sunflower kernels labeled with a stable isotope of cadmium,  $^{113}\text{Cd}$ . *Environ Res* 87:69-80.
- Van Gestel CA, Adema DM, de Boer JL, et al. 1988. The influence of soil clean-up on the bioavailability of metals. In: Wolf K, Van den Brink WJ, Colon FJ, eds. *Contaminated soil '88*. The Netherlands: Kluser Academic Publishers, 63-66.
- van Hattum B, de Voogt P, van den Bosch L, et al. 1989. Bioaccumulation of cadmium by the freshwater isopod *Asellus aquaticus* (L.) from aqueous and dietary sources. *Environ Pollut* 62:129-152.
- Vanhoe H, Dams R, Versieck J. 1994. Use of inductively coupled plasma mass spectrometry for the determination of ultra-trace elements in human serum. *J Anal Atom Spectrom* 9:23-31.
- van Sittert NJ, Ribbens PH, Huisman B, et al. 1993. A nine year follow-up study of renal effects in workers exposed to cadmium in a zinc ore refinery. *Br J Ind Med* 50:603-612.
- \*Varga B, Zsolnai B, Paksy K, et al. 1993. Age dependent accumulation of cadmium in the human ovary. *Reprod Toxicol* 7(3):225-228.
- Vasudev V, Krishnamurthy NB. 1979. Dominant lethals induced by cadmium in *Drosophila melanogaster*. *Curr Sci* 48:1007-1008.
- Verschoor M, Herber R, van Hemmen, et al. 1987. Renal function of workers with low-level cadmium exposure. *Scand J Work Environ Health* 13:232-238.
- Vestergaard P, Shaikh ZA. 1994. The nephrotoxicity of intravenously administered cadmium-metallothionein: Effect of dose, mode of administration, and preexisting renal cadmium burden. *Toxicol Appl Pharmacol* 126:240-247.

## 9. REFERENCES

- Viau C, Bernard A, Lauwerys R, et al. 1984. Cadmium compound analgesics, and the chronic progressive nephrosis in the female Sprague-Dawley rat. *Arch Toxicol* 55:247-249.
- Viccellio P. 1998. Cadmium, mercury, and arsenic. In: *Emergency toxicology*. 2nd ed. Philadelphia, PA: Lippincott-Raven Publishers, 379-380.
- Vidovic M, Sadibasic A, Cupic S, et al. 2005. Cd and Zn in atmospheric deposit, soil, wheat, and milk. *Environ Res* 97:26-31.
- Vieira I, Sonnier M, Cresteil T. 1996. Developmental expression of CYP2E1 in the human liver: Hypermethylation control of gene expression during the neonatal period. *Eur J Biochem* 238(2):476-483.
- Vos G, Lammers H, Kan CA. 1990. Cadmium and lead in muscle tissue and organs of broilers, turkeys and spent hens, and in mechanically deboned poultry meat. *Food Addit Contam* 7:83-92.
- \*Waalkes MP. 1986. Effect of dietary zinc deficiency on the accumulation of cadmium and metallothionein and selected tissues of the rat. *J Toxicol Environ Health* 18:301-313.
- Waalkes MP, Goering PL. 1990. Metallothionein and other cadmium-binding proteins: Recent developments. *Chem Res Toxicol* 3:281-288.
- Waalkes MP, Klaassen CD. 1985. Concentration of metallothionein in major organs of rats after administration of various metals. *Fundam Appl Toxicol* 5:473-477.
- Waalkes MP, Rehm S. 1992. Carcinogenicity of oral cadmium in the male Wistar (WF/NCr) rat: Effect of chronic dietary zinc deficiency. *Fundam Appl Toxicol* 19:512-520.
- Waalkes MP, Rehm S. 1994a. Chronic toxic and carcinogenic effects of cadmium chloride in male DBA/2NCr and NFS/NCr mice: Strain dependent association with tumors of the hematopoietic system, injection site, liver, and lung. *Fundam Appl Toxicol* 23:21-31.
- Waalkes MP, Rehm S. 1994b. Carcinogenic and chronic toxic effects of single and multiple subcutaneous doses of cadmium chloride in male BALB/c mice. *Toxic Subst J* 13:97-111.
- Waalkes MP, Coogan TP, Barter RA. 1992. Toxicological principles of metal carcinogenesis with special emphasis on cadmium. *Crit Rev Toxicol* 22(3,4):175-201.
- Waalkes MP, Diwan BA, Weghorst CM, et al. 1993. Further evidence of the tumor suppressive effects of cadmium in the B6C3F1 mouse liver and lung: Late stage vulnerability of tumors to cadmium and the role of metallothionein. *J Pharmacol Exp Ther* 266(3):1656-1663.
- Waalkes MP, Rehm S, Riggs CW, et al. 1989. Cadmium carcinogenesis in male Wistar [CrI:(WI)BR] rats: Dose-response analysis of effects of zinc on tumor induction in the prostate, in the testes, and at the injection site. *Cancer Res* 49:4282-4288.
- Waalkes MP, Watkins JB, Klaassen CD. 1983. Minimal role of metallothionein in decreased chelator efficacy for cadmium. *Toxicol Appl Pharmacol* 68:392-398.
- \*Wahba ZZ, Waalkes MP. 1990. Cadmium-induced route-specific alterations in essential trace element homeostasis. *Toxicol Lett* 54:77-81.

## 9. REFERENCES

- Wahlberg JE, Boman A. 1979. Guinea pig maximization test method-cadmium chloride. *Contact Dermatitis* 5:405.
- Wahlberg JE. 1965. Percutaneous toxicity of metal compounds. *Arch Environ Health* 11:201-204.
- Wahlberg JE. 1977. Routine patch testing with cadmium chloride. *Contact Dermatitis* 3:293-296.
- Wang C, Bhattacharyya MH. 1993. Effect of cadmium on bone calcium and  $^{45}\text{Ca}$  in nonpregnant mice on a calcium-deficient diet: evidence of direct effect of cadmium on bone. *Toxicol Appl Pharmacol* 120:228-239.
- Wang XP, Foulkes EC. 1984. Specificity of acute effects of cadmium on renal function. *Toxicology* 30:243-247.
- Wang C, Brown S, Bhattacharyya MH. 1994. Effect of cadmium on bone calcium and  $^{45}\text{Ca}$  in mouse dams on a calcium-deficient diet: Evidence of itai-itai-like syndrome. *Toxicol Appl Pharmacol* 127:320-330.
- Wang C, Fang Y, Peng S, et al. 1999. Synthesis of novel chelating agents and their effect on cadmium decorporation. *Chem Res Toxicol* 12:331-334.
- Wang H, Zhu G, Shi Y, et al. 2003. Influence of environmental cadmium exposure on forearm bone density. *J Bone Miner Res* 18(3):553-560.
- Watanabe M, Shiroishi K, Nishino H, et al. 1986. An experimental study on the long-term effect of cadmium in mice fed cadmium-polluted rice with special reference to the effect of repeated reproductive cycles. *Environ Res* 40:25-46.
- Watanabe T, Endo A. 1982. Chromosome analysis of preimplantation embryos after cadmium treatment of oocytes at meiosis. I. *Environ Mutagen* 4:563-567.
- Watanabe T, Kasahara M, Nakatsuka H, et al. 1987. Cadmium and lead contents of cigarettes produced in various areas of the world. *Sci Total Environ* 66:29-37.
- \*Watanabe T, Nakatsuka H, Seiji K, et al. 1989. Blood cadmium levels in the populations of Masan, Korea, and Miyagi, Japan: An inter-regional comparison. *Toxicol Lett* 47:155-163.
- Watanabe T, Shimada T, Endo A. 1979. Mutagenic effects of cadmium on mammalian oocyte chromosomes. *Mutat Res* 67:349-356.
- Watanabe T, Shimbo S, Moon CS, et al. 1996. Cadmium contents in rice samples from various areas in the world. *Sci Total Environ* 184(3):191-196.
- Watanabe Y, Kobayashi E, Okubo Y, et al. 2002. Relationship between cadmium concentration in rice and renal dysfunction in individual subjects of the Jinzu River basin determined using a logistic regression analysis. *Toxicology* 172:93-101.
- Webster WS. 1978. Cadmium-induced fetal growth retardation in the mouse. *Arch Environ Health* 33:36-42.

## 9. REFERENCES

- Weidenhamer JD, Miller J, Guinn D, et al. 2011. Bioavailability of cadmium in inexpensive jewelry. *Environ Health Perspect* 119(7):1029-1033.
- Weigel HJ, Jager HJ, Elmadfa I. 1984. Cadmium accumulation in rat organs after extended oral administration with low concentrations of cadmium oxide. *Arch Environ Contam Toxicol* 13:279-287.
- Welz B, Xu S, Sperling M. 1991. Flame atomic absorption spectrometric determination of cadmium, cobalt, and nickel in biological samples using a flow injection system with on-line preconcentration by co-precipitation without filtration. *Appl Spectrosc* 45(9):1433-1443.
- Welz B, Yin X, Sperling M. 1992. Time-based and volume-based sampling for flow-injection on-line sorbent extraction graphite furnace atomic absorption spectrometry. *Anal Chim Acta* 261:477-487.
- West JR, Smith HW, Chasis H. 1948. Glomerular filtration rate, effective renal blood flow, and maximal tubular excretory capacity in infancy. *J Pediatr* 32:10-18.
- Wester RC, Maibach HI, Sedik L, et al. 1992. *In vitro* percutaneous absorption of cadmium from water and soil into human skin. *Fundam Appl Toxicol* 19:1-5.
- Whanger PD. 1992. Selenium in the treatment of heavy metal poisoning and chemical carcinogenesis. *J Trace Elem Electrolytes Health Dis* 6:209-221.
- Whelton BD, Bhattacharyya MH, Carnes BA, et al. 1988. Female reproduction and pup survival and growth for mice fed a cadmium-containing purified diet through six consecutive rounds of gestation and lactation. *J Toxicol Environ Health* 24:321-343.
- WHO. 2000. Air quality guidelines. 2nd ed. Geneva, Switzerland: World Health Organization. <http://www.euro.who.int/Document/AIQ/AirQualRepMtg.pdf>. March 08, 2006.
- WHO. 2004. Guidelines for drinking-water quality. Vol. 1. Recommendations. 3rd ed. Geneva, Switzerland: World Health Organization. [http://www.who.int/water\\_sanitation\\_health/dwq/gdwq3/en/](http://www.who.int/water_sanitation_health/dwq/gdwq3/en/). March 08, 2006.
- Widdowson EM, Dickerson JWT. 1964. Chemical composition of the body. In: Comar CL, Bronner F, eds. *Mineral metabolism: An advanced treatise*. Vol. II: The elements Part A. New York, NY: Academic Press, 1-247.
- Wilber GG, Smith L, Malanchuk JL. 1992. Emissions inventory of heavy metals and hydrophobic organics in the Great Lakes basin. In: Schnoor JL, ed. *Fate of pesticides and chemicals in the environment*. John Wiley and Sons, Inc., 27-50.
- Wilhelm M, Eberwein G, Holzer J, et al. 2005. Human biomonitoring of cadmium and lead exposure of child-mother pairs from Germany living in the vicinity of industrial sources (Hot Spot Study NRW). *J Trace Elem Med Biol* 19:83-90.
- Wilhelm M, Ohnesorge FK, Hotzel D. 1990. Cadmium, copper, lead, and zinc concentrations in human scalp and pubic hair. *Sci Total Environ* 92:199-206.
- Wills JH, Groblewski GE, Coulston F. 1981. Chronic and multigeneration toxicities of small concentrations of cadmium in the diet of rats. *Ecotoxicol Environ Saf* 5:452-464.

## 9. REFERENCES

- Wilson RH, DeEds F, Cox AJ. 1941. Effects of continued cadmium feeding. *J Pharmacol Exp Ther* 71:222-235.
- Wisniewska-Knypl JM, Jablonska J, Myslak Z. 1971. Binding of cadmium on metallothionein in man: An analysis of a fatal poisoning by cadmium iodide. *Arch Toxicol* 28:46-55.
- Woittiez JRW, Tangonan MD. 1992. Determination of Cd, Mo, Cr, and Co in biological materials by RNAA. *J Radioanal Nucl Chem* 158(2):313-321.
- Wong KL, Klaassen CD. 1980a. Tissue distribution and retention of cadmium in rats during postnatal development: minimal role of hepatic metallothionein. *Toxicol Appl Pharmacol* 53:343-353.
- \*Wong KL, Klaassen CD. 1980b. Age difference in the susceptibility to cadmium-induced testicular damage in rats. *Toxicol Appl Pharmacol* 55:456-466.
- Wong KL, Klaassen CD. 1982. Neurotoxic effect of cadmium in young rats. *Toxicol Appl Pharmacol* 63:330-337.
- Wong PK. 1988. Mutagenicity of heavy metals. *Bull Environ Contam Toxicol* 40(4):597-603.
- Wronska-Nofer T, Wisniewska-Knypl J, Wyszynska K. 1999. Prooxidative and genotoxic effect of transition metals (cadmium, nickel, chromium, and vanadium) in mice. *Trace Elem Electrolytes* 15(2):87-92.
- Wu Q, Magnus JH, Hentz JG. 2010. Urinary cadmium, osteopenia, and osteoporosis in the US population. *Osteoporos Int* 21(8):1449-1454.
- Wu X, Jin T, Wang Z, et al. 2001. Urinary calcium as a biomarker of renal dysfunction in a general population exposed to cadmium. *J Occup Environ Med* 43(10):898-904.
- Wu X, Liang Y, Jin T, et al. 2008. Renal effects evolution in a Chinese population after reduction of cadmium exposure in rice. *Environ Res* 108(2):233-238.
- Xu B, Chia SE, Tsakok M, et al. 1993a. Trace elements blood and seminal plasma and their relationship to sperm quality. *Reprod Toxicol* 7:613-618.
- Xu B, Jin Y, Fen Z, et al. 1993b. Lipid peroxidation induced by maternal cadmium exposure in mouse pups. *Bull Environ Contam Toxicol* 51:772-779.
- Xu C, Holscher MA, Jones MM, et al. 1995. Effect of monoisoamyl meso-2,3-dimercaptosuccinate on the pathology of acute cadmium intoxication. *J Toxicol Environ Health* 45:261-277.
- Xu C, Johnson JE, Singh PK, et al. 1996. *In vivo* studies of cadmium-induced apoptosis in testicular tissue of the rat and its modulation by a chelating agent. *Toxicology* 107:1-8.
- Xue H, Sigg L, Gachter R. 2000. Transport of Cu, Zn and Cd in a small agricultural catchment. *Water Res* 34(9):2558-2568.
- Yamanaka O, Kobayashi EN K, Suwazono Y, et al. 1998. Association between renal effects and cadmium exposure in cadmium-nonpolluted area in Japan. *Environ Res* 77(Sect A):1-8.

## 9. REFERENCES

- Yamane Y, Fukuchi M, Li CK, et al. 1990. Protective effect of sodium molybdate against the acute toxicity of cadmium chloride. *Toxicology* 60:235-243.
- Yokota H, Tonami H. 2008. Experimental studies on the bone metabolism of male rats chronically exposed to cadmium intoxication using dual-energy X-ray absorptiometry. *Toxicol Ind Health* 24(3):161-170.
- Zeng X, Jin T, Buchet JP, et al. 2004a. Impact of cadmium exposure on male sex hormones: A population-based study in China. *Environ Res* 2004:338-344.
- Zeng X, Jin T, Jiang X, et al. 2004b. Effects on the prostate of environmental cadmium exposure—a cross-sectional population study in China. *Biomaterials* 17(5):559-565.
- Zenick H, Hastings L, Goldsmith M, et al. 1982. Chronic cadmium exposure: Relation to male reproductive toxicity and subsequent fetal outcome. *J Toxicol Environ Health* 9:377-387.
- Zhang YL, Zhao YC, Wang JX, et al. 2004. Effect of environmental exposure to cadmium on pregnancy outcome and fetal growth: A study on healthy pregnant women in China. *J Environ Sci Health A* 39(9):2507-2515.
- Zhang ZQ, Chen SZ, Lin HM, et al. 1993. Simultaneous determination of copper, nickel, lead, cobalt and cadmium by adsorptive voltammetry. *Anal Chim Acta* 272:227-232.
- \*Zhou D, Zhang L, Zhou J, et al. 2004a. Cellulose/chitin beads for adsorption of heavy metals in aqueous solution. *Water Res* 38:2643-2650.
- Zhou T, Jia X, Chapin RE, et al. 2004b. Cadmium at a non-toxic dose alters gene expression in mouse testes. *Toxicol Lett* 154(3):191-200.
- Zhu G, Wang H, Shi Y, et al. 2004. Environmental cadmium exposure and forearm bone density. *Biomaterials* 17:499-503.
- Ziegler EE, Edwards BB, Jensen RL, et al. 1978. Absorption and retention of lead by infants. *Pediatr Res* 12(1):29-34.