5. List of References

Abadin HG, Wheeler JS, Jones DE, et al. 1997. A framework to guide public health assessment decisions at lead sites. J Clean Technol Environ Toxicol Occup Med 6(3):225–237.

Abdelghani AA, Pramar YV, Mandal TK, et al. 1995. Levels and toxicities of selected inorganic and organic contaminants in a swamp environment. J Environ Sci Health B30(5):717–731.

Abernathy CO, Liu Y-P, Longfellow D, et al. 1999. Arsenic: health effects, mechanisms of actions, and research issues. Environ Health Perspect 107(7):593–597.

*ACGIH. 1998. 1998 threshold limit values for chemical substances and physical agents. Biological exposure indices. Cincinnati, OH: American Conference of Governmental Industrial Hygienists.

Aguilar MV, Martinez-Para MC, Gonzalez MJ. 1997. Effect of arsenic (V)-chromium (III) interaction on plasma glucose and cholesterol levels in growing rats. Ann Nutr Metab 41:189–195.

*Akahori F, Masaoka T, Arai S. 1994. A nine-year old 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.

Albores A, Koropatnick J, Cherian MG, et al. 1992. Arsenic induced and enhances rat hepatic metallothionein production in vivo. Chem Biol Interact 85:127–140.

*Alexander BH, Checkoway H, van Netten C, et al. 1996. Semen quality of men employed at a lead smelter. Occup Environ Med 53:41–416.

Aschner M, Cherian MG, Klaassen CD, et al. 1997. Metallothioneins in brain -- The role in physiology and pathology. Toxicol Appl Pharmacol 142:229–242.

*ATSDR. 1992. Public health assessment guidance manual. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry.

*ATSDR. 1995a. A case-control study to determine risk factors for elevated blood lead levels in children - The Silver Valley, Idaho. Atlanta, GA: Agency for Toxic Substances and Disease Registry. PB 95253837.

*ATSDR. 1995b. Final Report: Multisite lead and cadmium exposure study with biological markers incorporated. Atlanta, GA: U.S. Department of Health and Human Services. Agency for Toxic Substances and Disease Registry.

*ATSDR. 1998. Guidance for risk assessment of exposure to lead: A site-specific, multi-media approach. In: Andrews JS, Frumkin H, Johnson BL, et al. eds. Hazardous waste and public health: International congress on the health effects of hazardous waste: May 3–6, 1993: Atlanta, Georgia. Princeton, NJ: U.S. Department of Health and Human Services. Agency for Toxic Substances and Disease Registry. 477–485.

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*Cited in text

*ATSDR. 1999a. Toxicological profile for cadmium. Atlanta, GA: Agency for Toxic Substances and Disease Registry.

*ATSDR. 1999b. Toxicological profile for lead. Atlanta, GA: Agency for Toxic Substances and Disease Registry.

*ATSDR. 2000a. Toxicological profile for arsenic. Atlanta, GA: Agency for Toxic Substances and Disease Registry.

*ATSDR. 2000b. Toxicological profile for chromium. Atlanta, GA: Agency for Toxic Substances and Disease Registry.

*ATSDR. 2001a. Guidance manual for the assessment of joint toxic action of chemical mixtures. Atlanta, GA: Agency for Toxic Substances and Disease Registry.

*ATSDR. 2001b. Guidance manual for the preparation of an interaction profile. Atlanta, GA: Agency for Toxic Substances and Disease Registry.

Bache CA, Lisk DJ, Scarlett JM, et al. 1991. Epidemiological study of cadmium and lead in the hair of ceramists and dental personnel. J Toxicol Environ Health 34:423–431.

Bebe FN, Panemangalore M. 1996. Modulation of tissue trace metal concentrations in weanling rats fed different levels of zinc and exposed to oral lead and cadmium. Nutr Res 16(8):1369–1380.

*Beckman L, Nordenson I. 1986. Interaction between some common genotoxic agents. Hum Hered 36:397–401.

*Benjamin SA, Yang RSH, Tessari JD, et al. 1999. Lack of promotional effects of groundwater contaminant mixtures on the induction of preneoplastic foci in rat liver. Toxicology 137:137–149.

*Bernard AM, Lauwerys RR. 1981. The effects of sodium chromate and carbon tetrachloride on the urinary excretion and tissue distribution of cadmium in cadmium-pretreated rats. Toxicol Appl Pharmacol 57:30–38.

Bernier J, Brousseau P, Krzystyniak K, et al. 1995. Immunotoxicity of heavy metals in relation to great lakes. Environ Health Perspect 103(Suppl. 9):23–34.

Beyersmann D. 1994. Interactions in metal carcinogenicity. Toxicol Lett 72:333–338.

*Blankenship LJ, Carlisle DL, Wise JP, et al. 1997. Induction of apoptotic cell death by particulate lead chromate: Differential effects of vitamins C and E on genotoxicity and survival. Toxicol Appl Pharmacol 146:270–280.

*Brown MM, Rhyne BC, Goyer RA et al. 1976. Intracellular effects of chronic arsenic administration on renal proximal tubule cells. J Toxicol Environ Health 1:505–514.

*Buchet J-P, Roels H, Bernard A, et al. 1981. Assessment of renal function of workers simultaneously exposed to inorganic lead and cadmium. J Occup Med 23(5):348–352.

*Byron WR, Bierbower GW, Brouwer JB, et al. 1967. Pathologic changes in rats and dogs from two-year feeding of sodium arsenite or sodium arsenate. Toxicol Appl Pharmacol 10:132–147.

*Campain JA, Bae D, Gennings C, et al. 2000. Toxicological interactions among arsenic, cadmium, chromium, and lead in human keratinocytes. Toxicol Sci 54(1):226.

Carfagna MA, Ponsler GD, Muhoberac BB. 1996. Inhibition of ATPase activity in rat synaptic plasma membrane by simultaneous exposure to metals. Chem Biol Interact 100:53–65.

*CDC. 1991. Preventing lead poisoning in young children. Atlanta, GA: U.S. Department of Health and Human Services. Public Health Service. Centers for Disease Control.

*Chalkley SR, Richmond J, Barltrop D. 1998. Measurement of vitamin D_3 metabolites in smelter workers exposed to lead and cadmium. Occup Environ Med 55:446–452.

*Cherian MG. 1985. Rat kidney epithelial cell culture for metal toxicity studies: In vitro. Cell Dev Biol 21:505–508.

Conetta JA. 1993. Histologic effects of noise in the hearts of laboratory rats exposed to lead and cadmium. J Environ Sci Health Part A28(2):403–421.

Conner EA, Fowler BA. 1993. Mechanisms of metal-induced nephrotoxicity. In: Hook JB, Goldstein RS, ed. Toxicology of the kidney. New York, NY: Raven Press, 437–457.

Constan AA, Benjamin SA, Tessari JD, et al. 1996. Increased rate of apoptosis correlated with hepatocellular proliferation in Fischer-344 rats following long-term exposure to a mixture of groundwater contaminants. Toxicol Pathol 24(3):315–322.

Constan AA, Yang RSH, Baker DC, et al. 1995. A unique pattern of hepatocyte proliferation in F344 rats following long-term exposures to low levels of a chemical mixture of groundwater contaminants. Carcinogenesis 16(2):303–310.

*Corpas I, Antonio MT. 1998. Study of alteration produced by cadmium and cadmium/lead administration during gestational and early lactation periods in the reproductive organs of the rat. Ecotoxicol Environ Saf 41:180–188.

Costa M, Klein CB. 1999. Nickel carcinogenesis, mutation, epigenetics, or selection. Environ Health Perspect 107(9):A438–A439.

Degawa M, Arai H, Kubota M, et al. 1994. Ionic lead, a unique metal ion as an inhibitor for cytochrome P450IA2 (CYP1A2) expression in the rat liver. Biochem Biophys Res Commun 200(2):1086–1092.

*de Meester P, Hodgson DJ. 1977. Synthesis and structural characterization of L-histidinato-D-penicillam-inatochromium(III) monohydrate. J Chem Soc Dalton Trans 17:1603–1607.

*de Meester P, Hodgson, DJ, Freeman HC, et al. 1977. Tridentate coordination of the L-cysteine dianion. Crystal and molecular structure of sodium bis(L-cysteinato) chromate(III) dihydrate. Inorganic Chem 16(6):1494–1498.

*Der R, Fahim Z, Yousef M, et al. 1976. Environmental interaction of lead and cadmium on reproduction and metabolism of male rats. Res Commun Chem Pathol Pharmacol 14(4):689–713.

*Díaz-Barriga F, Llamas E, Mejía JJ, et al. 1990. Arsenic-cadmium interaction in rats. Toxicology 64:191–203.

*Diaz-Mayans J, Laborda R, Nunez A. 1986. Hexavalent chromium effects on motor activity and some metabolic aspects of Wistar albino rats. Comp Biochem Physiol 83C(1):191–195.

Dieter MP. 1993. Fate, transport, and interactions of metals. Environ Health Perspect 101(4):344–345.

*Elbetieha A, Al-Hamood MH. 1997. Long-term exposure of male and female mice to trivalent and hexavalent chromium compounds: effect on fertility. Toxicology 116(1–3):39–47.

*Elsenhans B, Schmolke G, Kolb K, et al. 1987. Metal-metal interactions among dietary toxic and essential trace metals in the rat. Ecotoxicol Environ Saf 14:275–287.

Endo T, Shaikh Z. 1993. Cadmium uptake by primary cultures of rat renal cortical epithelial cells: Influence of cell density and other metal ions. Toxicol Appl Pharmacol 121:203–209.

Enserink EL, Maas-Diepeveen JL, Van Leeuwen CJ. 1991. Combined effects of metals; An ecotoxicological evaluation. Water Res 25(6):679–687.

EPA. 1994a. Revised interim soil lead guidance for CERCLA sites and RCRA corrective action facilities. Washington, DC: Office of Emergency and Remedial Response, U.S. Environmental Protection Agency. OSWER Directive No. 9355.4-12. EPA/540/F-94/043. PB94-963282.

EPA. 1994b. Technical support document: Parameters and equations used in the integrated exposure uptake biokinetic model for lead in children (v. 0.99d). Washington, DC: Office of Emergency and Remedial Response. EPA/540/R-94/040. PB94-963505.

EPA. 1996. Recommendations of the Technical Review Workgroup for lead for an interim approach to assessing risks associated with adult exposures to lead in soil. Technical Review Workgroup for Lead. U.S. Environmental Protection Agency.

*EPA. 1998. Final risk assessment report for the Palmerton zinc site Palmerton, Pennsylvania. Philadelphia, PA: U.S. Environmental Protection Agency.

*Exon JH, Koller LD, Kerkvliet NI. 1979. Lead-cadmium interaction: Effects on viral-induced mortality and tissue residues in mice. Arch Environ Health 34(6):469–475.

*Fahim MS, Khare NK. 1980. Effects of subtoxic levels of lead and cadmium on urogenital organs of male rats. Arch Androl 4:357–362.

*Fairhall LT, Miller JW. 1941. A study of the relative toxicity of the molecular components of lead arsenate. Public Health Rep 56:1610–1625.

*Ferm VH. 1969. The synteratogenic effect of lead and cadmium. Experientia 23(1):56-57.

*Fowler BA, Mahaffey KR. 1978. Interactions among lead, cadmium, and arsenic in relation to porphyrin excretion patterns. Environ Health Perspect 25:87–90.

*Franzblau A, Lilis R. 1989. Acute arsenic intoxication from environmental arsenic exposure. Arch Environ Health 44(6):385–390.

*Friberg LT, Kjellström T, Elinder C-G, et al. 1986. Cadmium and health: A toxicological and epidemiological appraisal. Volume II: Effects and response. Boca Raton, Fl.: CRC Press. 169–179.

Geertz R, Gulyas H, Gercken G. 1994. Cytotoxicity of dust constituents toward alveolar macrophages: Interactions of heavy metal compounds. Toxicology 86:13–27.

Gerhardsson L, Nordberg GF. 1993. Lung cancer in smelter workers -- interactions of metals as indicated by tissue levels. Scand J Work Environ Health 19(Suppl. 1):90–94.

Gerhardsson L, Börjesson J, Grubb A, et al. 1998. *In vivo* XRF as a means to evaluate the risk of kidney effects in lead and cadmium exposed smelter workers. Appl Radiat Isot 49(5/6):711–712.

Germolec DR, Luster MI. 1994. Immune alterations resulting from exposure to chemical mixtures. In: Yang RSH, ed. Toxicology of chemical mixtures: Case studies, mechanisms, and novel approaches. San Diego, CA: Academic Press, 197–217.

Gill BS, Sandhu SS. 1992. Application of the Tradescantia micronucleus assay for the genetic evaluation of chemical mixtures in soil and aqueous metals. Mutat Res 270:65–69.

Goering PL, Klaassen CD. 1984. Tolerance to cadmium-induced hepatotoxicity following cadmium pretreatment. Toxicol Appl Pharmacol 74:308–313.

*Gonzalez MJ, Aguilar MV, Martinez Para MC. 1995. Gastrointestinal absorption of inorganic arsenic (V): The effect of concentration and interactions with phosphate and dichromate. Vet Hum Toxicol 37(2): 131–136.

*Goyer RA. 1995. Toxic effects of metals. In: Klaassen CD, Amdur MO, Doull J, eds. Casarett and Doull's toxicology: The basic science of poisons. 5th ed. New York, NY: McGraw-Hill: Health Professions Division. 696–698, 703–709.

Goyer RA. 1997. Toxic and essential metal interactions. Annu Rev Nutr 17:37-50.

Gulyas H, Labedzka M, Gercken G. 1990. Depression of alveolar macrophage hydrogen peroxide and superoxide anion release by mineral dusts: Correlation with antimony, lead, and arsenic contents. Environ Res 51:218–229.

Gupta S, Bhosale S, Pandya K. 1994. Effect of simultaneous low level exposure of Pb and Cd on δ -ALAD and acetylcholinesterase activity in rats. Indian J Exp Biol 32:819–821.

Habeebu SS, Liu J, Liu Y, et al. 2000. Metallothionein-null mice are more sensitive than wild-type mice to liver injury induced by repeated exposure to cadmium. Toxicol Sci 55:223–232.

Haddad S, Tardif R, Viau C, et al. 1999. A modeling approach to account for toxicokinetic interactions in the calculation of biological hazard index for chemical mixtures. Toxicol Lett 108:303–308.

Hamilton JW, Kaltreider RC, Bajenova OV, et al. 1998. Molecular basis for effects of carcinogenic heavy metals on inducible gene expression. Environ Health Perspect 106(Suppl. 4):1005–1015.

Han B-C, Jeng WL, Chen RY, et al. 1998. Estimation of target hazard quotients and potential health risks for metals by consumption of seafood in Taiwan. Arch Environ Contam Toxicol 35:711–720.

Haneef SS, Swarup D, Kalicharan, et al. 1995. The effect of concurrent lead and cadmium exposure on the cell-mediated immune response in goats. Vet Hum Toxicol 37(5):428–429.

Hartmann A, Speit G. 1996. Effect of arsenic and cadmium on the persistence of mutagen-induced DNA lesions in human cells. Environ Mol Mutagen 27:98–104.

Hartwig A. 1998. Carcinogenicity of metal compounds: possible role of DNA repair inhibition. Toxicol Lett 102–103:235–239.

*Healy SM, Casarez EA, Ayala-Fierro F, et al. 1998. Enzymatic methylation of arsenic compounds. V. Arsenite methyltransferase activity in tissues of mice. Toxicol Appl Pharmacol 148(1):65–70.

Heindel J, George J, Fail P, et al. 1997. Chemical mixture. Environ Health Perspect 105(Suppl. 1):369–370.

Hermann U, Kaulich TW, Schweinsberg F. 1989. Investigations of the relation between blood pressure and levels of cadmium and lead in hair of non-smoking men. Zentralbl Hyg Umeweltmed 188:240–253.

*Hochadel JF, Waalkes MP. 1997. Sequence of exposure to cadmium and arsenic determines the extent of toxic effects in male Fischer rats. Toxicology 116:89–98.

Hogan GR. 1992. Cadmium treatment and lead-induced suppression of splenic erythropoiesis. J Toxicol Environ Health 35:1–6.

*IARC. 1987. IARC monographs on the evaluation of the carcinogenic risk of chemicals to humans: Overall evaluations of carcinogenicity. Vol. 1 to 42: Supplement 7: An updating of IARC monographs. World Health Organization, Lyons, France.

*IARC. 1990. IARC monographs on the evaluation of carcinogenic risks to humans. Chromium, nickel and welding. Vol. 49. World Health Organization, Lyons, France, 49–256.

*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 1 to 29. IARC monographs vol 58. Lyon, France: World Health Organization. International Agency for Research on Cancer. 119–146, 210–236.

*IPCS. 1995. Environmental health criteria 165: Inorganic lead. International Programme on Chemical Safety. Geneva: World Health Organization. 178–191.

*IRIS. 2001. Arsenic, cadmium, chromium(VI), and lead. Integrated Risk Information System. U.S. Environmental Protection Agency. http://www.epa.gov/iris/subst/index.htm. April 07, 2001.

Jonnalagadda SB, Prasada Rao PVV. 1993. Toxicity, bioavailability and metal speciation. Comp Biochem Physiol 106C(3):585–595.

Jordan SA, Bhatnager MK. 1990. Hepatic enzyme activity after combined administration of methylmercury, lead and cadmium in the Pekin duck. Bull Environ Contam Toxicol 44:623–628.

Jordan SA, Bhatnagar MK, Dettger WJ. 1990. Combined effects of methylmercury, lead, and cadmium on hepatic metallothionein and metal concentrations in the Pekin duck. Arch Environ Contam Toxicol 19:886–891.

*Keith RL, McGuinness SJ, Gandolfi AJ, et al. 1995. Interaction of metals during their uptake and accumulation in rabbit renal cortical slices. Environ Health Perspect 103(Suppl. 1):77–80.

*Kerger BD, Finley BL, Corbett GE, et al. 1997. Ingestion of chromium(VI) in drinking water by human volunteers: Absorption, distribution, and excretion of single and repeated doses. J Toxicol Environ Health 50:67–95.

*Kopp SJ, Bárány M, Erlanger M, et al. 1980a. The influence of chronic low-level cadmium and/or lead feeding on myocardial contractility related to phosphorylation of cardiac myofibrillar proteins. Toxicol Appl Pharmacol 54:48–56.

*Kopp SJ, Glonek T, Erlanger M, et al. 1980b. Altered metabolism and function of rat heart following chronic low level cadmium/lead feeding. J Mol Cell Cardiol 12:1407–1425.

*Kopp SJ, Glonek T, Perry HM, et al. 1982. Cardiovascular actions of cadmium at environmental exposure levels. Science 217:837–839.

*Kreppel H, Kolb K, Reichl FX, et al. 1988. Pretreatment with low doses of cadmium or zinc decreases lethality in mice acutely poisoned with arsenic. Trace Elem Anal Chem Med Biol 5:594–600.

Kreppel H, Liu J, Liu Y, et al. 1994. Zinc-induced arsenite tolerance in mice. Fundam Appl Toxicol 23:32–37.

Krishnan K, Brodeur J. 1994. Toxic interactions among environmental pollutants: Corroborating laboratory observations with human experience. Environ Health Perspect 102(Suppl. 9):11–17.

*Kroes R, van Logten MJ, Berkvens JM, et al. 1974. Study on the carcinogenicity of lead arsenate and sodium arsenate and on the possible synergistic effect of diethylnitrosamine. Food Cosmet Toxicol 12:671–679.

*Kumar A, Rana SVS. 1984. Enzymological effects of hexavalent chromium in the rat kidney. Int J Tissue React 6(2):135–139.

*Kumar A, Rana SVS, Prakash R. 1985. Dysenzymuria induced by hexavalent chromium. Int J Tissue React 7(4):333–338.

Kungolos A, Aoyama I. 1993. Interaction effect, food effect, and bioaccumulation of cadmium and chromium for the system *Daphnia magna-Chlorella ellipsoidea*. Environ Toxicol Water Qual 8:351–369.

Kurttio P, Pukkala E, Kahelin H, et al. 1999. Arsenic concentrations in well water and risk of bladder and kidney cancer in Finland. Environ Health Perspect 107(9):705–710.

Lansdown ABG. 1995. Physiological and toxicological changes in the skin resulting from the action and interaction of metal ions. Crit Rev Toxicol 25(5):397–462.

Lee T-C, Tanaka N, Lamb PW, et al. 1988. Induction of gene amplification by arsenic. Science 241:79–81.

Lewis M, Worobey J, Ramsay DS, et al. 1992. Prenatal exposure to heavy metals: Effect on childhood cognitive skills and health status. Pediatrics 89(6):1010–1015.

Li J-H, Rossman TG. 1989. Inhibition of DNA ligase activity by arsenite: A possible mechanism of its comutagenesis. Mol Toxicol 2(1):1–9.

*Lianfang W, Jianzhong H. 1994. Chronic arsenism from drinking water in some areas of Xinjiang, China. In: Nriagu JO, ed. Arsenic in the environment: Part II: Human health and ecosystem effects. New York, NY: John Wiley and Sons, Inc., 159–172.

*Lieberman H. 1941. Chrome ulcerations of the nose and throat. New Engl J Med 225:132–133.

*Liebscher K, Smith H. 1968. Essential and nonessential trace elements: A method of determining whether an element is essential of nonessential in human tissue. Arch Environ Health 17:881–890.

*Lindgren A, Vahter M, Dencker L. 1982. Autoradiographic studies on the distribution of arsenic in mice and hamsters administered 74As-arsenite or -arsenate. Acta Pharmacol Toxicol 51:253–265.

*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, Habeebu SS, et al. 1998. Susceptibility of MT-null mice to chronic CdCl₂-induced nephrotoxicity indicates that renal injury is not mediated by the CdMT complex. Toxicol Sci 46:197–203.

*Liu J, Liu Y, Habeebu SS, et al. 1999a. Metallothionein-null mice are highly susceptible to the hematotoxic and immunotoxic effects of chronic $CdCl_2$ exposure. Toxicol Appl Pharmacol 159:98–109.

*Liu J, Liu Y, Habeebu SS, et al. 1999b. Metallothionein protects against the nephrotoxicity produced by chronic CdMT exposure. Toxicol Sci 50:221–227.

*Lockett CJ, Leary WP. 1986. Neurobehavioral effects in rats fed low doses of cadmium and lead to induce hypertension. S Afr Med J 69:190–192.

MacIntosh DL, Spengler JD, Özkaynak H, et al. 1996. Dietary exposures to selected metals and pesticides. Environ Health Perspect 104(2):202–209.

*Mahaffey KR, Fowler BA. 1977. Effects pf concurrent administration of lead, cadmium, and arsenic in the rat. Environ Health Perspect 19:165–171.

*Mahaffey KR, Capar SG, Gladen BC, et al. 1981. Concurrent exposure to lead, cadmium, and arsenic: Effects on toxicity and tissue metal concentrations in the rat. J Lab Clin Med 98:463–481.

*Marlowe M, Cossairt A, Moon C, et al. 1985a. Main and interaction effects of metallic toxins on classroom behavior. J Abnorm Child Psychol 13(2):185–198.

*Marlowe M, Stellern J, Errera J, et al. 1985b. Main and interaction effects of metal pollutants on visual-motor performance. Arch Environ Health 40(4):221–225.

*Mason RW, Edwards IR. 1989. Acute toxicity of combinations of sodium dichromate, sodium arsenate and copper sulphate in the rat. Comp Biochem Physiol 93C(1):121–125.

*Mason RW, Edwards IR, Fisher LC. 1989. Teratogenicity of combinations of sodium dichromate, sodium arsenate and copper sulphate in the rat. Comp Biochem Physiol 93C(2):407–411.

*Mejía JJ, Díaz-Barriga F, Calderón J, et al. 1997. Effects of lead-arsenic combined exposure on central monoaminergic systems. Neurotoxicol Teratol 19(6):489–497.

*Mitchell-Heggs CAW, Conway M, Cassar J. 1990. Herbal medicine as a cause of combined lead and arsenic poisoning. Hum Exp Toxicol 9:195–196.

*Mizuta N, Mizuta M, Ito F, et al. 1956. An outbreak of acute arsenic poisoning caused by arsenic-contaminated soy-sauce (shōyu): A clinical report of 220 cases. Bull Yamaguchi Med Sch 4(2–3):131–149.

*Moon C, Marlowe M, Stellern J, et al. 1985. Main and interaction effects of metallic pollutants on cognitive functioning. J Learn Disabil 18(4):217–221.

*Mumtaz MM, Durkin PR. 1992. A weight-of-evidence approach for assessing interactions in chemical mixtures. Toxicol. Ind. Health 8: 377–406.

*Mumtaz MM, De Rosa CT, Durkin PR. 1994. Approaches and challenges in risk assessments of chemical mixtures. In: Yang RSH, ed. Toxicology of chemical mixtures: Case studies, mechanisms and novel approaches. New York, NY: Academic Press, 565–597.

*Nation JR, Frye GD, Von Stultz J, et al. 1989. Effects of combined lead and cadmium exposure: Changes in schedule-controlled responding and in dopamine, serotonin, and their metabolites. Behav Neurosci 103(5):1108–1114.

*Nation JR, Grover CA, Bratton GR, et al. 1990. Behavioral antagonism between lead and cadmium. Neurotoxicol Teratol 12:99–104.

*Needleman HL, Gatsonis CA. 1990. Low-level lead exposure and the IQ of children: A meta-analysis of modern studies. J Am Med Assoc 263:673–678.

*Nordenson I, Beckman L. 1984. Interaction between some common clastogenic agents. Toxicol Environ Chem 8:39–43.

*NRC. 1989. Recommended dietary allowances. 10th ed. Washington, DC: National Academy Press. National Research Council.

NRC. 1999. Arsenic in drinking water. Washington, DC: National Academy Press. National Research Council.

*NTP. 1996a. Final report on the reproductive toxicity of potassium dichromate (hexavalent) (CAS No. 7778-50-9) administered in diet to SD rats. National Institute of Environmental Health Sciences. National Toxicology Program. NTIS No. PB97-125355.

*NTP. 1996b. Final report on the reproductive toxicity of potassium dichromate (hexavalent) (CAS No. 7778-50-9) administered in diet to BALB/c mice. National Institute of Environmental Health Sciences. National Toxicology Program. NTIS No. PB97-125363.

*NTP. 1997. Final report on the reproductive toxicity of potassium dichromate (CAS No. 7778-50-9) administered in diet to BALB/c mice. National Institute of Environmental Health Sciences. National Toxicology Program. NTIS No. PB97-144919.

*NTP. 2001. 9th report on carcinogens. Research Triangle Park, NC: U.S. Department of Health and Human Services. National Toxicology Program. http://ehis.niehs.nih.gov/roc/toc9.html. March 07, 2001.

O'Flaherty EJ. 1998. Physiologically based models of metal kinetics. Crit Rev Toxicol 28(3):271-317.

*Ogoshi K, Moriyama T, Nanzai Y. 1989. Decrease in the mechanical strength of bones of rats administered cadmium. Arch Toxicol 63:320–324.

Oller WL, Kendall DC, Greenman DL. 1989. Variability of selected nutrients and contaminants monitored in rodent diets: A 6-year study. J Toxicol Environ Health 27:47–56.

Pascoe GA, Blanchet RJ, Linder G, et al. 1994. Characterization of ecological risks at the Milltown Reservoir-Clark Fork River sediments superfund site, Montana. Environ Toxicol Chem 13(12):2043–2058.

Peraza MA, Ayala-Fierro F, Barber DS, et al. 1998. Effects of micronutrients on metal toxicity. Environ Health Perspect 106(Suppl. 1):203–216.

*Perry HM, Erlanger MW. 1978. Pressor effects of chronically feeding cadmium and lead together. Trace Subst Environ Health 12:268–275.

*Perry HM, Erlanger MW, Perry EF. 1983. Effect of a second metal on cadmium-induced hypertension. Arch Environ Health 38(2):80–85.

*Perry HM Jr, Erlanger MW, Gustafsson TO, et al. 1989. Reversal of cadmium-induced hypertension by D-myo-insitol-1,2,6-triphosphate. J Toxicol Environ Health 28:151–159.

Pfaller W, Gstraunthaler G. 1998. Nephrotoxicity testing *in vitro*-what we know and what we need to know. Environ Health Perspect 106(Suppl. 2):559–569.

*Pleasants WE, Sandow ME, DeCandido S, et al. 1992. The effect of vitamin D3 and 1,25-dihydroxy-vitamin D3 on the toxic symptoms of cadmium exposed rats. Nutr Res 12:1393–1403.

*Pocock SJ, Smith M, Baghurst P. 1994. Environmental lead and children's intelligence: a systematic review of the epidemiological evidence. Br Med J 309:1189–1197.

Prasada Rao PVV, Jordan SA, Bhatnagar MK. 1989. Combined nephrotoxicity of methylmercury, lead, and cadmium in Pekin ducks: Metallothionein, metal interactions, and histopathology. J Toxicol Environ Health 26:327–348.

Prasada Rao PVV, Jordan SA, Bhatnagar MK. 1993. Renal enzyme changes in Pekin ducks (*Anas platyrychos*) after combined administration of methylmercury, cadmium and lead. Comp Biochem Physiol 106C(3):769–772.

Rahman M, Tondel M, Ahmad SA, et al. 1999. Hypertension and arsenic exposure in Bangladesh. Hypertension 33:74–78.

Richardson ME, Fox MRS. 1975. Dietary cadmium and enteropathy in the Japanese quail: Histochemical and ultrastructural studies. Lab Invest 31(6):722–731.

Rodríguez VM, Dufour L, Carrizales L, et al. 1998. Effects of oral exposure to mining waste on *in vivo* dopamine release from rat striatum. Environ Health Perspect 106(8):487–491.

*Roels HA, Buchet J-P, Bernard A, et al. 1978. Investigations of factors influencing exposure and response to lead, mercury, and cadmium in man and in animals. Environ Health Perspect 25:91–96.

Rojas E, Herrera LA, Poirier LA, et al. 1999. Are metals dietary carcinogens? Mutat Res 443:157–181.

Sahu RK, Katsifis SP, Kinney PL, et al. 1989. Effects of nickel sulfate, lead sulphate, and sodium arsenite alone and with UV light on sister chromatid exchanges in cultured human lymphocytes. J Mol Toxicol 2:129–136.

*Sato K, Iwamasa T, Tsuru T, et al. 1978. An ultrastructural study of chronic cadmium chloride-induced neuropathy. Acta Neuropathol (Berl) 41:185–190.

*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(2):317–329.

*Schmolke G, Elsenhans B, Ehtechami C, et al. 1992. Arsenic-copper interaction in the kidney of the rat. Hum Exp Toxicol 11:315–321.

*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, Vinton WH. 1962. Hypertension induced in rats by small doses of cadmium. Amer J Physiol 202(3):515–518.

Schulz H, Nagymajtényi L, Dési I. 1997. Interventions during individual development of rats affect the behaviour in adulthood: A three-generation study. Neurotoxicology 18(3):881.

*Schwartz J. 1994. Low-level lead exposure and children's IQ: A meta-analysis and search for a threshold. Environ Res 65:42–55.

*Sheerin NS, Monk PN, Aslam M, et al. 1994. Simultaneous exposure to lead, arsenic and mercury from Indian ethnic remedies. Br J Clin Pract 48(6):332–333.

*Shimada H, Shiao Y-H, Shibata M-A, et al. 1998. Cadmium suppresses apoptosis induced by chromium. J Toxicol Environ Health A54:159–168.

*Shiwen C, Lin Y, Xhineng 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, Chandra SV. 1987. Concurrent exposure to lead, manganese, and cadmium and their distribution to various brain regions, liver, kidneys, and testis of growing rats. Arch Environ Contam Toxicol 16:303–310.

Simmons JE. 1994. Nephrotoxicity resulting from multiple chemical exposures and chemical interactions. In: Yang RSH, ed. Toxicology of chemical mixtures: Case studies, mechanisms, and novel approaches. San Diego, CA: Academic Press, Inc., 335–360.

*Skoczynska A, Smolik R. 1994. The effect of combined exposure to lead and cadmium on serum lipids and lipid peroxides level in rats. Int J Occup Med Environ Health 7(3):263–271.

*Skoczynska A, Smolik R, Milian A. 1994. The effect of combined exposure to lead and cadmium on the concentration of zinc and copper in rat tissues. Int J Occup Med Environ Health 7(1):41–49.

*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.

*Southwick JW, Western AE, Beck MM, et al. 1981. Community health associated with arsenic in drinking water in Millard County, Utah. Cincinnati, OH: U.S. Environmental Protection Agency, Health Effects Research Laboratory, EPA-600/1-81-064. NTIS No. PB82-108374.

Stacey NH, Klaassen CD. 1981. Interaction of metal ions with cadmium-induced cellular toxicity. J Toxicol Environ Health 7:149–158.

Storm GL, Fosmire GJ, Bellis ED. 1994. Heavy metals in the environment: Persistence of metals in soil and selected vertebrates in the vicinity of the Palmerton zinc smelters. J Environ Qual 23:508–514.

Suzuki CAM, Cherian MG. 1987. Renal toxicity of cadmium-metallothionein and enzymuria in rats. J Pharmacol Exp Ther 240(1):314–319.

Suzuki CAM, Ohta H, Albores A, et al. 1990. Induction of metallothionein synthesis by zinc in cadmium pretreated rats. Toxicology 63:273–284.

Tabacova S, Baird DD, Balabaeva L, et al. 1994. Placental arsenic and cadmium in relation to lipid peroxides and glutathione levels in maternal-infant pairs from a copper smelter area. Placenta 15:873–881.

*Thatcher RW, Lester ML, McAlaster R, et al. 1982. Effects of low levels of cadmium and lead on cognitive functioning in children. Arch Environ Health 37(3):159–166.

*Thawley DG, Willoughby RA, McSherry BJ, et al. 1977. Toxic interactions among Pb, Zn, and Cd with varying levels of dietary Ca and vitamin D: Hematological system. Environ Res 14:463–475.

Tondel M, Rahman M, Magnuson A, et al. 1999. The relationship of arsenic levels in drinking water and the prevalence rate of skin lesions in Bangladesh. Environ Health Perspect 107(9):727–729.

*Tseng C-H, Chong C-K, Chen C-J, et al. 1995. Abnormal peripheral microcirculation in seemingly normal subjects living in Blackfoot-disease-hyperendemic villages in Taiwan. Int J Microcirc Clin Exp 15(1):21–27.

*Tseng C-H, Chong C-K, Chen C-J, et al. 1996. Dose-response relationship between peripheral vascular disease and ingested inorganic arsenic among residents in blackfoot disease endemic villages in Taiwan. Atherosclerosis 120:125–133.

*Tseng W-P. 1977. Effects and dose-response relationships of skin cancer and Blackfoot disease with arsenic. Environ Health Perspect 19:109–119.

*Tseng WP, Chu HM, How SW, et al. 1968. Prevalence of skin cancer in an endemic area of chronic arsenicism in Taiwan. J Natl Cancer Inst 40:453–463.

*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.

*Verberk MM, Willems TEP, Verplanke AJW, et al. 1996. Environmental lead and renal effects in children. Arch Environ Health 51(1):83–87.

Verriopoulos G, Dimas S. 1988. Combined toxicity of copper, cadmium, zinc, lead, nickel, and chrome to the copepod *Tisbe holothuriae*. Bull Environ Contam Toxicol 41:378–384.

Voors AR, Shuman MS, Gallagher PN. 1975. Atherosclerosis and hypertension in relation to some trace elements in tissues. World Rev Nutr Diet 20:299–326.

*Voors AW, Johnson WD, Shuman MS. 1982. Additive statistical effects of cadmium and lead on heart-related disease in a North Carolina autopsy series. Arch Environ Health 37(2):98–102.

*Wagner SL, Maliner JS, Morton WE, et al. 1979. Skin cancer and arsenical intoxication from well water. Arch Dermatol 115:1205–1207.

Waltner-Toews D, McEwen SA. 1994. Residues of industrial chemicals and metallic compounds in foods of animal origin: A risk assessment. Prev Vet Med 20:201–218.

WHO. 1981. Health effects of combined exposures in the work environment. Technical Report Series 662. Geneva: World Health Organization.

Wingren G, Axelson O. 1993. Epidemiologic studies of occupational cancer as related to complex mixtures of trace elements in the art glass industry. Scand J Work Environ Health 19(Suppl. 1):95–100.

*Wise JP, Stearns DM, Wetterhahn KE, et al. 1994. Cell-enhanced dissolution of carcinogenic lead chromate particles: The role of individual dissolution products in clastogenesis. Carcinogenesis 15(10):2249–2254.

Xu B, Chia S-E, Ong C-N. 1994. Concentrations of cadmium, lead, selenium, and zinc in human blood and seminal plasma. Biol Trace Elem Res 40:49–57.

Yang RSH, El-Masri HA, Thomas RS, et al. 1995. The application of physiologically based pharmacokinetic/pharmacodynamic (PBPK/PD) modeling for exploring risk assessment approaches of chemical mixtures. Toxicol Lett 79:193–200.

Yang RSH, Goehl TJ, Brown RD, et al. 1989. Toxicology studies of a chemical mixture of 25 groundwater contaminants: I. Chemistry development. Fundam Appl Toxicol 13:366–376.

*Yáñez L, Carrizales L, Zanatta MT, et al. 1991. Arsenic-cadmium interaction in rats: Toxic effects in the heart and tissue metal shifts. Toxicology 67:227–234.

Yoshikawa H, Ohta H. 1982. Interaction of metals and metallothionein. In: Foulkes EC, ed. Biological roles of metallothionein. Amsterdam: Elsevier North Holland Inc., 11–23.

Yücesoy B, Turhan A, Üre M, et al. 1997a. Effects of occupational lead and cadmium exposure on some immunoregulatory cytokine levels in man. Toxicology 123:143–147.

*Yücesoy B, Turhan A, Üre M, et al. 1997b. Simultaneous effects of lead and cadmium on NK cell activity and some phenotypic parameters. Immunopharmacol Immunotoxicol 19(3):339–348.

*Zaldívar R, Guillier A. 1977. Environmental and clinical investigations on endemic chronic arsenic poisoning in infants and children. Zentralbl Bakteriol Hyg 165:226–234.