

CHAPTER 8. REFERENCES

- Aaseth J, Wallace DR, Vejrup K, et al. 2020. Methylmercury and developmental neurotoxicity: A global concern. *Curr Opin Toxicol* 19:80-87. <https://doi.org/10.1016/j.cotox.2020.01.005>.
- Abass K, Huusko A, Knutsen HK, et al. 2018. Quantitative estimation of mercury intake by toxicokinetic modelling based on total mercury levels in humans. *Environ Int* 114:1-11. <https://doi.org/10.1016/j.envint.2018.02.028>.
- Abd El-Aziz GS, El-Fark MM, Saleh HA. 2012. The prenatal toxic effect of methylmercury on the development of the appendicular skeleton of rat fetuses and the protective role of vitamin E. *Anat Rec* 295(6):939-949. <https://doi.org/10.1002/ar.22485>.
- Aberg B, Ekman L, Falk R, et al. 1969. Metabolism of methyl mercury (^{203}Hg) compounds in man. *Arch Environ Health* 19(4):478-484.
- Abiko Y, Katayama Y, Zhao W, et al. 2021. The fate of methylmercury through the formation of dimethylmercury sulfide as an intermediate in mice. *Sci Rep* 11(1):17598. <https://doi.org/10.1038/s41598-021-96579-y>.
- ADFG. 1976. Environmental contaminants and parasites in polar bears. Juneau, AK: Alaska Department of Fish and Game. http://www.adfg.alaska.gov/static/home/library/pdfs/wildlife/research_pdfs/76_pbear_contam_lentfer.pdf. January 13, 2021.
- ADPH. 1998. The use of traditional foods in a healthy diet in Alaska. Anchorage, AK: Alaska Division of Public Health. http://www.epi.alaska.gov/bulletins/docs/rr1998_01.pdf. January 13, 2021.
- af Geijersstam E, Sandborgh-Englund G, Jonsson F, et al. 2001. Mercury uptake and kinetics after ingestion of dental amalgam. *J Dent Res* 80(9):1793-1796. <https://doi.org/10.1177/00220345010800090401>.
- Afrifa J, Essien-Baidoo S, Ephraim RKD, et al. 2017. Reduced eGFR, elevated urine protein and low level of personal protective equipment compliance among artisanal small scale gold miners at Bibiani-Ghana: a cross-sectional study. *BMC Public Health* 17(1):601. <https://doi.org/10.1186/s12889-017-4517-z>.
- Afrifa J, Ogbordjor WD, Duku-Takyi R. 2018. Variation in thyroid hormone levels is associated with elevated blood mercury levels among artisanal small-scale miners in Ghana. *PLoS ONE* 13(8):e0203335. <https://doi.org/10.1371/journal.pone.0203335>.
- Agrawal R, Chansouria JP. 1989. Chronic effects of mercuric chloride ingestion on rat adrenocortical function. *Bull Environ Contam Toxicol* 43(3):481-484. <https://doi.org/10.1007/BF01701886>.
- Agrawal S, Flora G, Bhatnagar P, et al. 2014. Comparative oxidative stress, metallothionein induction and organ toxicity following chronic exposure to arsenic, lead and mercury in rats. *Cell Mol Biol (Noisy-le-grand)* 60(2):13-21.
- Aguilar A, Borrell A. 1995. Pollution and harbour porpoises in the Eastern North Atlantic: A review. In: *Biology of the phocoenids: A collection of papers. Report of the International Whaling Commission, Special issue 16*. Cambridge: International Whaling Commission, 231-242.
- Ahlqwist M, Bengtsson C, Lapidus L, et al. 1999. Serum mercury concentration in relation to survival, symptoms, and diseases: Results from the prospective population study of women in Gothenburg, Sweden. *Acta Odontol Scand* 57(3):168-174. <https://doi.org/10.1080/000163599428913>.
- Ahmad S, Qureshi IH. 1989. Fast mercury removal from industrial effluent. *J Radioanal Nucl Chem* 130(2):347-352. <https://doi.org/10.1007/bf02041354>.
- Ahmad S, Mahmood R. 2019. Mercury chloride toxicity in human erythrocytes: enhanced generation of ROS and RNS, hemoglobin oxidation, impaired antioxidant power, and inhibition of plasma membrane redox system. *Environ Sci Pollut Res Int* 26(6):5645-5657. <https://doi.org/10.1007/s11356-018-04062-5>.

8. REFERENCES

- Ai CE, Li CJ, Tsou MC, et al. 2019. Blood and seminal plasma mercury levels and predatory fish intake in relation to low semen quality. *Environ Sci Pollut Res Int* 26(19):19425-19433. <https://doi.org/10.1007/s11356-019-04592-6>.
- Airaksinen R, Turunen AW, Rantakokko P, et al. 2011. Blood concentration of methylmercury in relation to food consumption. *Public Health Nutr* 14(3):480-489. <https://doi.org/10.1017/s1368980010001485>.
- Akagi H, Malm O, Branches F, et al. 1995. Human exposure to mercury due to goldmining in the Tapajos River Basin, Amazon, Brazil: Speciation of mercury in human hair, blood and urine. *Water Air Soil Pollut* 80(1-4):85-94.
- Akerstrom M, Barregard L, Lundh T, et al. 2017. Relationship between mercury in kidney, blood, and urine in environmentally exposed individuals, and implications for biomonitoring. *Toxicol Appl Pharmacol* 320:17-25. <https://doi.org/10.1016/j.taap.2017.02.007>.
- Albasher G, Alkahtani S, Alarifi S. 2020. Berberine mitigates oxidative damage associated with testicular impairment following mercury chloride intoxication. *J Food Biochem* 44(9):e13385. <https://doi.org/10.1111/jfbc.13385>.
- Al-Batanony MA, Abdel-Rasul GM, Abu-Salem MA, et al. 2013. Occupational exposure to mercury among workers in a fluorescent lamp factory, Quisna Industrial Zone, Egypt. *Int J Occup Environ Med* 4(3):149-156.
- Albers JW, Cavender GD, Levine SP, et al. 1982. Asymptomatic sensorimotor polyneuropathy in workers exposed to elemental mercury. *Neurology* 32(10):1168-1174. <https://doi.org/10.1212/wnl.32.10.1168>.
- Albers JW, Kallenbach LR, Fine LJ, et al. 1988. Neurological abnormalities associated with remote occupational elemental mercury exposure. *Ann Neurol* 24(5):651-659. <https://doi.org/10.1002/ana.410240510>.
- Albert I, Villeret G, Paris A, et al. 2010. Integrating variability in half-lives and dietary intakes to predict mercury concentration in hair. *Regul Toxicol Pharmacol* 58(3):482-489. <https://doi.org/10.1016/j.yrtph.2010.08.020>.
- Albores-Garcia D, Acosta-Saavedra LC, Hernandez AJ, et al. 2016. Early developmental low-dose methylmercury exposure alters learning and memory in periadolescent but not young adult rats. *BioMed Res Int* 2016:6532108. <https://doi.org/10.1155/2016/6532108>.
- Alfthan GV. 1997. Toenail mercury concentration as a biomarker of methylmercury exposure. *Biomarkers* 2(4):233-238. <https://doi.org/10.1080/135475097231607>.
- Algahtani MM, Ahmad SF, Alkharashi LA, et al. 2023. Exposure to methylmercury at juvenile stage worsens autism-like symptoms in adult BTBR T+tf/J mice due to lack of nuclear factor erythroid 2-related factor 2 signaling upregulation in periphery and brain. *Toxics* 11(6):546. <https://doi.org/10.3390/toxics11060546>.
- Ali Z, Ulrik CS. 2013. Obesity and asthma: A coincidence or a causal relationship? A systematic review. *Respir Med* 107(9):1287-1300. <https://doi.org/10.1016/j.rmed.2013.03.019>.
- Aligne CA, Auinger P, Byrd RS, et al. 2000. Risk factors for pediatric asthma. *Am J Respir Crit Care Med* 162(3):873-877. <https://doi.org/10.1164/ajrccm.162.3.9908085>.
- Allard B, Arsenie I. 1991. Abiotic reduction of mercury by humic substances in aquatic system: An important process for the mercury cycle. *Water Air Soil Pollut* 56(0):457-464.
- Allen BC, Hack CE, Clewell HJ. 2007. Use of Markov Chain Monte Carlo analysis with a physiologically-based pharmacokinetic model of methylmercury to estimate exposures in US women of childbearing age. *Risk Anal* 27(4):947-959. <https://doi.org/10.1111/j.1539-6924.2007.00934.x>.
- Al-Mazroua HA, Nadeem A, Ansari MA, et al. 2022. Methylmercury chloride exposure exacerbates existing neurobehavioral and immune dysfunctions in the BTBR T(+) Itpr3(tf)/J mouse model of autism. *Immunol Lett* 244:19-27. <https://doi.org/10.1016/j.imlet.2022.03.001>.
- Al-Mufti AW, Copplestone JF, Kazantzis G, et al. 1976. Epidemiology of organomercury poisoning in Iraq. I. Incidence in a defined area and relationship to the eating of contaminated bread. *Bull World Health Organ* 53(Suppl):23-36.

8. REFERENCES

- Al-Saleh I, Al-Doush I. 1997. Mercury content in skin-lightening creams and potential hazards to the health of Saudi women. *J Toxicol Environ Health* 51(2):123-130. <https://doi.org/10.1080/00984109708984016>.
- Al-Saleh I, Shinwari N, Mashhour A, et al. 2006. Cadmium and mercury levels in Saudi women and its possible relationship with hypertension. *Biol Trace Elem Res* 112(1):13-29. <https://doi.org/10.1385/bter:112:1:13>.
- Al-Saleh I, Shinwari N, Mashhour A, et al. 2011. Heavy metals (lead, cadmium and mercury) in maternal, cord blood and placenta of healthy women. *Int J Hyg Environ Health* 214(2):79-101. <https://doi.org/10.1016/j.ijheh.2010.10.001>.
- Al-Saleh I, Al-Sedairi A, Elkhatib R. 2012. Effect of mercury (Hg) dental amalgam fillings on renal and oxidative stress biomarkers in children. *Sci Total Environ* 431:188-196. <https://doi.org/10.1016/j.scitotenv.2012.05.036>.
- Al-Saleh I, Abduljabbar M, Al-Rouqi R, et al. 2013. Mercury (Hg) exposure in breast-fed infants and their mothers and the evidence of oxidative stress. *Biol Trace Elem Res* 153(1-3):145-154. <https://doi.org/10.1007/s12011-013-9687-7>.
- Al-Saleh I, Shinwari N, Mashhour A, et al. 2014. Birth outcome measures and maternal exposure to heavy metals (lead, cadmium and mercury) in Saudi Arabian population. *Int J Hyg Environ Health* 217(2-3):205-218. <https://doi.org/10.1016/j.ijheh.2013.04.009>.
- Al-Saleh I, Nester M, Abduljabbar M, et al. 2016. Mercury (Hg) exposure and its effects on Saudi breastfed infant's neurodevelopment. *Int J Hyg Environ Health* 219(1):129-141. <https://doi.org/10.1016/j.ijheh.2015.10.002>.
- Al-Saleh I, Al-Rouqi R, Elkhatib R, et al. 2017. Risk assessment of environmental exposure to heavy metals in mothers and their respective infants. *Int J Hyg Environ Health* 220(8):1252-1278. <https://doi.org/10.1016/j.ijheh.2017.07.010>.
- Al-Saleh I, Al-Mohawes S, Al-Rouqi R, et al. 2019. Selenium status in lactating mothers-infants and its potential protective role against the neurotoxicity of methylmercury, lead, manganese, and DDT. *Environ Res* 176:108562. <https://doi.org/10.1016/j.envres.2019.108562>.
- Altunkaynak ME, Akgul N, Yahyazadeh A, et al. 2015. A stereological and histopathological study of the effects of exposure of male rat testes to mercury vapor. *Biotech Histochem* 90(7):529-534. <https://doi.org/10.3109/10520295.2015.1024739>.
- Altunkaynak BZ, Akgul N, Yahyazadeh A, et al. 2016. Effect of mercury vapor inhalation on rat ovary: Stereology and histopathology. *J Obstet Gynaecol Res* 42(4):410-416. <https://doi.org/10.1111/jog.12911>.
- Altunkaynak BZ, Akgül N, Yahyazadeh A, et al. 2019. A stereological study of the effects of mercury inhalation on the cerebellum. *Biotech Histochem* 94(1):42-47. <https://doi.org/10.1080/10520295.2018.1493224>.
- Amara IE, Elshenawy OH, Abdelrady M, et al. 2014. Acute mercury toxicity modulates cytochrome P450, soluble epoxide hydrolase and their associated arachidonic acid metabolites in C57B1/6 mouse heart. *Toxicol Lett* 226(1):53-62. <https://doi.org/10.1016/j.toxlet.2014.01.025>.
- Aminzadeh KK, Etminan M. 2007. Dental amalgam and multiple sclerosis: A systematic review and meta-analysis. *J Public Health Dent* 67(1):64-66.
- Amin-Zaki L, Elhassani S, Majeed MA, et al. 1974. Intra-uterine methylmercury poisoning in Iraq. *Pediatrics* 54(5):587-595.
- Amin-Zaki L, Elhassani S, Majeed MA, et al. 1976. Perinatal methylmercury poisoning in Iraq. *Am J Dis Child* 130(10):1070-1076.
- Amin-Zaki L, Majeed MA, Clarkson TW, et al. 1978. Methylmercury poisoning in Iraqi children: Clinical observations over two years. *Br Med J* 1(6113):613-616.
- Amin-Zaki L, Majeed MA, Greenwood MR, et al. 1981. Methylmercury poisoning in the Iraqi suckling infant: a longitudinal study over five years. *J Appl Toxicol* 1(4):210-214.

8. REFERENCES

- Amirhosseini M, Alkaissi H, Hultman PA, et al. 2021. Autoantibodies in outbred Swiss Webster mice following exposure to gold and mercury. *Toxicol Appl Pharmacol* 412:115379. <https://doi.org/10.1016/j.taap.2020.115379>.
- An H, Wang B, Li Z, et al. 2021. Distribution of mercury in serum and blood cells and risk of spontaneous preterm birth: A nested case-control study in China. *Ecotoxicol Environ Saf* 217:112228. <https://doi.org/10.1016/j.ecoenv.2021.112228>.
- 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.
- Andersson AB. 1979. Mercury in soils. In: Nriagu JO, ed. *The biogeochemistry of mercury in the environment*. New York, NY: Elsevier/North Holland Biomedical Press, 79-112.
- Andersson I, Parkman H, Jernelov A. 1990. The role of sediments as sink or source for environmental contaminants: A case study of mercury and chlorinated organic compounds. *Limnologica* 20(2):347-360.
- Andren AW, Nriagu JO. 1979. The global cycle of mercury. In: Nriagu JO, ed. *The biogeochemistry of mercury in the environment*. New York, NY: Elsevier/North Holland Biomedical Press, 1-22.
- Andreoli V, Sprovieri F. 2017. Genetic aspects of susceptibility to mercury toxicity: An overview. *Int J Environ Res Public Health* 14:93. <https://doi.org/10.3390/ijerph14010093>.
- Andrew AS, O'Brien KM, Jackson BP, et al. 2020. Keratinous biomarker of mercury exposure associated with amyotrophic lateral sclerosis risk in a nationwide U.S. study. *Amyotroph Lateral Scler Frontotemporal Degener* 21(5-6):420-427. <https://doi.org/10.1080/21678421.2020.1753777>.
- Anglen J, Gruninger SE, Chou HN, et al. 2015. Occupational mercury exposure in association with prevalence of multiple sclerosis and tremor among US dentists. *J Am Dent Assoc* 146(9):659-668 e651. <https://doi.org/10.1016/j.adaj.2015.05.016>.
- Ansari MS, Miller WJ, Gentry RP, et al. 1973. Tissue 203 Hg distribution in young Holstein calves after single tracer oral doses in organic and inorganic forms. *J Anim Sci* 36(2):415-419.
- Anwar WA, Gabal MS. 1991. Cytogenetic study in workers occupationally exposed to mercury fulminate. *Mutagenesis* 6(3):189-192.
- Apaydin FG, Bas H, Kalender S, et al. 2016. Subacute effects of low dose lead nitrate and mercury chloride exposure on kidney of rats. *Environ Toxicol Pharmacol* 41:219-224. <https://doi.org/10.1016/j.etap.2015.12.003>.
- Arakawa C, Yoshinaga J, Okamura K, et al. 2006. Fish consumption and time to pregnancy in Japanese women. *Int J Hyg Environ Health* 209(4):337-344. <https://doi.org/10.1016/j.ijheh.2006.02.004>.
- Araki S, Aono H, Murata K. 1986. Adjustment of urinary concentration to urinary volume in relation to erythrocyte and plasma concentrations: an evaluation of urinary heavy metals and organic substances. *Arch Environ Health* 41(3):171-177. <https://doi.org/10.1080/00039896.1986.9935773>.
- Arbi S, Oberholzer HM, Van Rooy MJ, et al. 2017. Effects of chronic exposure to mercury and cadmium alone and in combination on the coagulation system of Sprague-Dawley rats. *Ultrastruct Pathol* 41(4):275-283. <https://doi.org/10.1080/01913123.2017.1327909>.
- Arito H, Takahashi M. 1991. Effect of methylmercury on sleep patterns in the rat. In: Suzuki T, Imura N, Clarkson TW, eds. *Advances in mercury toxicology*. New York, NY: Plenum Press, 381-394.
- Aschner M, Clarkson TW. 1988. Uptake of methylmercury in the rat brain: Effects of amino acids. *Brain Res* 462(1):31-39.
- Aschner M, Clarkson TW. 1989. Methyl mercury uptake across bovine brain capillary endothelial cells in vitro: The role of amino acids. *Pharmacol Toxicol* 64(3):293-297. <https://doi.org/10.1111/j.1600-0773.1989.tb00650.x>.
- Aschner M, Eberle NB, Goderie S, et al. 1990. Methylmercury uptake in rat primary astrocyte cultures: The role of the neutral amino acid transport system. *Brain Res* 521(1-2):221-228.
- Aschner M, Eberle NB, Kimelberg HK. 1991. Interactions of methylmercury with rat primary astrocyte cultures: Methylmercury efflux. *Brain Res* 554(1-2):10-14.

8. REFERENCES

- Aschner M, Syversen T, Souza DO, et al. 2006. Metallothioneins: Mercury species-specific induction and their potential role in attenuating neurotoxicity. *Exp Biol Med* 231(9):1468-1473.
- Aschner M, Syversen T, Souza DO, et al. 2007. Involvement of glutamate and reactive oxygen species in methylmercury neurotoxicity. *Braz J Med Biol Res* 40(3):285-291.
- Asgary S, Movahedian A, Keshvari M, et al. 2017. Serum levels of lead, mercury and cadmium in relation to coronary artery disease in the elderly: A cross-sectional study. *Chemosphere* 180:540-544. <https://doi.org/10.1016/j.chemosphere.2017.03.069>.
- Ashe WF, Largent EJ, Dutra FR, et al. 1953. Behavior of mercury in the animal organism following inhalation. *AMA Arch Ind Hyg Occup Med* 7(1):19-43.
- Ashrap P, Watkins DJ, Mukherjee B, et al. 2020. Maternal blood metal and metalloid concentrations in association with birth outcomes in Northern Puerto Rico. *Environ Int* 138:105606. <https://doi.org/10.1016/j.envint.2020.105606>.
- Ask K, Akesson A, Berglund M, et al. 2002. Inorganic mercury and methylmercury in placentas of Swedish women. *Environ Health Perspect* 110(5):523-526.
- ASTER. 1997. ASTER (assessment tools for the evaluation of risk) ecotoxicity profile. Duluth, MN: U.S. Environmental Protection Agency.
- Atkinson A, Thompson SJ, Khan AT, et al. 2001. Assessment of a two-generation reproductive and fertility study of mercuric chloride in rats. *Food Chem Toxicol* 39(1):73-84. [https://doi.org/10.1016/s0278-6915\(00\)00096-x](https://doi.org/10.1016/s0278-6915(00)00096-x).
- ATSDR. 1989. Decision guide for identifying substance-specific data needs related to toxicological profiles. Atlanta, GA: Agency for Toxic Substances and Disease Registry.
- ATSDR. 1990. Technical assistance to the Tennessee Department of Health and Environment. Mercury exposure study Charleston, Tennessee. Atlanta, GA: Agency for Toxic Substances and Disease Registry. ATDR/HS-91/11. PB91151142. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB91151142.xhtml>. January 13, 2021.
- ATSDR. 1997. Press release: ATSDR and EPA warn the public about continuing patterns of metallic mercury exposure. Atlanta, GA: Agency for Toxic Substances and Disease Registry. <https://www.cdc.gov/media/pressrel/mercury.htm>. January 13, 2021.
- ATSDR. 2004. Interaction profile for: Persistent chemicals found in fish (chlorinated dibenzo-p-dioxins, hexachlorobenzene, p,p'-DDE, methylmercury, and polychlorinated biphenyls). Atlanta, GA: Agency for Toxic Substances and Disease Registry. <https://www.atsdr.cdc.gov/interactionprofiles/ip-fish/ip01.pdf>. December 14, 2020.
- ATSDR. 2012. Toxicological profile for cadmium. Agency for Toxic Substances and Disease Registry. PB2013105787. <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB2013105787.xhtml>. March 15, 2021.
- ATSDR. 2022. Mercury. Full SPL data. Substance priority list (SPL) resource page. Agency for Toxic Substances and Disease Registry. <https://www.atsdr.cdc.gov/SPL/resources/index.html>. April 1, 2024.
- Awata H, Linder S, Mitchell LE, et al. 2017. Association of dietary intake and biomarker levels of arsenic, cadmium, lead, and mercury among Asian populations in the United States: NHANES 2011-2012. *Environ Health Perspect* 125(3):314-323. <https://doi.org/10.1289/ehp28>.
- Axelrad DA, Bellinger DC, Ryan LM, et al. 2007a. Dose-response relationship of prenatal mercury exposure and IQ: An integrative analysis of epidemiologic data. *Environ Health Perspect* 115(4):609-615. <https://doi.org/10.1289/ehp.9303>.
- Axelrad DA, Bellinger DC, Ryan LM, et al. 2007b. Supplemental material: Dose-response relationship of prenatal mercury exposure and IQ: An integrative analysis of epidemiologic data. *Environ Health Perspect* 115 <https://doi.org/10.1289/ehp.9303>.
- Axtell CD, Myers GJ, Davidson PW, et al. 1998. Semiparametric modeling of age at achieving developmental milestones after prenatal exposure to methylmercury in the Seychelles child

8. REFERENCES

- development study. *Environ Health Perspect* 106(9):559-564. <https://doi.org/10.1289/ehp.106-1533142>.
- Axtell CD, Cox C, Myers GJ, et al. 2000. Association between methylmercury exposure from fish consumption and child development at five and a half years of age in the Seychelles Child Development Study: an evaluation of nonlinear relationships. *Environ Res* 84(2):71-80. <https://doi.org/10.1006/enrs.2000.4082>.
- Aydin N, Karaoglanoglu S, Yigit A, et al. 2003. Neuropsychological effects of low mercury exposure in dental staff in Erzurum, Turkey. *Int Dent J* 53(2):85-91.
- Bachand PAM, Kraus TEC, Stumpner EB, et al. 2019. Mercury sequestration and transformation in chemically enhanced treatment wetlands. *Chemosphere* 217:496-506. <https://doi.org/10.1016/j.chemosphere.2018.10.144>.
- Bache CA, Gutenmann WH, Rutzke M, et al. 1991. Concentrations of metals in grasses in the vicinity of a municipal refuse incinerator. *Arch Environ Contam Toxicol* 20(4):538-542. <https://doi.org/10.1007/bf01065846>.
- Baden HP, Goldsmith LA, Fleming B. 1973. A comparative study of the physicochemical properties of human keratinized tissues. *Biochim Biophys Acta* 322(2):269-278. [https://doi.org/10.1016/0005-2795\(73\)90303-6](https://doi.org/10.1016/0005-2795(73)90303-6).
- Bae S, Park SJ, Yeum KJ, et al. 2016. Cut-off values of blood mercury concentration in relation to increased body mass index and waist circumference in Koreans. *J Investig Med* 64(4):867-871. <https://doi.org/10.1136/jim-2015-000039>.
- Bagheri Hosseinabadi M, Khanjani N, Mobarake MD, et al. 2020. Neuropsychological effects of long-term occupational exposure to mercury among chloralkali workers. *Work* 66(3):491-498. <https://doi.org/10.3233/wor-203194>.
- Bagley MP, Schwartz RA, Lambert WC. 1987. Hyperplastic reaction developing within a tattoo. Diagnosis: Granulomatous tattoo reaction, probably to mercuric sulfide (cinnabar). *Arch Dermatol* 123(11):1557, 1560-1561. <https://doi.org/10.1001/archderm.123.11.1557b>.
- Bakir F, Damluji SF, Amin-Zaki L, et al. 1973. Methylmercury poisoning in Iraq. *Science* 181(4096):230-241.
- Ballabio C, Jiskra M, Osterwalder S, et al. 2021. A spatial assessment of mercury content in the European Union topsoil. *Sci Total Environ* 769:144755. <https://doi.org/10.1016/j.scitotenv.2020.144755>.
- Ballatori N. 2002. Transport of toxic metals by molecular mimicry. *Environ Health Perspect* 110(Suppl 5):689-694.
- Ballatori N, Clarkson TW. 1982. Developmental changes in the biliary excretion of methylmercury and glutathione. *Science* 216(4541):61-63.
- Ballatori N, Clarkson TW. 1984. Inorganic mercury secretion into bile as a low molecular weight complex. *Biochem Pharmacol* 33(7):1087-1092.
- Ballatori N, Clarkson TW. 1985. Biliary secretion of glutathione and of glutathione-metal complexes. *Fundam Appl Toxicol* 5(5):816-831.
- Ballatori N, Truong AT. 1995. Mechanisms of hepatic methylmercury uptake. *J Toxicol Environ Health* 46(3):343-353. <https://doi.org/10.1080/15287399509532040>.
- Ballatori N, Wang W, Lieberman MW. 1998. Accelerated methylmercury elimination in gamma-glutamyl transpeptidase-deficient mice. *Am J Pathol* 152(4):1049-1055.
- Bangsi D, Ghadirian P, Ducic S, et al. 1998. Dental amalgam and multiple sclerosis: a case-control study in Montreal, Canada. *Int J Epidemiol* 27(4):667-671. <https://doi.org/10.1093/ije/27.4.667>.
- Barany E, Bergdahl IA, Bratteby LE, et al. 2003. Mercury and selenium in whole blood and serum in relation to fish consumption and amalgam fillings in adolescents. *J Trace Elem Med Biol* 17(3):165-170. [https://doi.org/10.1016/s0946-672x\(03\)80021-4](https://doi.org/10.1016/s0946-672x(03)80021-4).
- Barber TE, Wallis G. 1986. Correction of urinary mercury concentration by specific gravity, osmolality, and creatinine. *J Occup Med* 28(5):354-359.

8. REFERENCES

- Barbone F, Rosolen V, Mariuz M, et al. 2019. Prenatal mercury exposure and child neurodevelopment outcomes at 18 months: Results from the Mediterranean PHIME cohort. *Int J Hyg Environ Health* 222(1):9-21. <https://doi.org/10.1016/j.ijheh.2018.07.011>.
- Barboni MT, da Costa MF, Moura AL, et al. 2008. Visual field losses in workers exposed to mercury vapor. *Environ Res* 107(1):124-131. <https://doi.org/10.1016/j.envres.2007.07.004>.
- Barboni MT, Feitosa-Santana C, Zachi EC, et al. 2009. Preliminary findings on the effects of occupational exposure to mercury vapor below safety levels on visual and neuropsychological functions. *J Occup Environ Med* 51(12):1403-1412. <https://doi.org/10.1097/JOM.0b013e3181bca9ea>.
- Barcelos GR, Grotto D, Serpeloni JM, et al. 2011. Protective properties of quercetin against DNA damage and oxidative stress induced by methylmercury in rats. *Arch Toxicol* 85(9):1151-1157. <https://doi.org/10.1007/s00204-011-0652-y>.
- Barcelos GR, Grotto D, Serpeloni JM, et al. 2012. Bixin and norbixin protect against DNA-damage and alterations of redox status induced by methylmercury exposure in vivo. *Environ Mol Mutagen* 53(7):535-541. <https://doi.org/10.1002/em.21715>.
- Barkay T, Liebert C, Gillman M. 1989. Environmental significance of the potential for mer(Tn-2I)-mediated reduction of Hg^{2+} to Hg^0 in natural waters. *Appl Environ Microbiol* 55(5):1196-1202.
- Barnes DG, Dourson M. 1988. Reference dose (RfD): Description and use in health risk assessments. *Regul Toxicol Pharmacol* 8(4):471-486.
- Barnes DM, Hanlon PR, Kircher EA. 2003. Effects of inorganic $HgCl_2$ on adipogenesis. *Toxicol Sci* 75(2):368-377. <https://doi.org/10.1093/toxsci/kfg195>.
- Barnett LMA, Cummings BS. 2018. Nephrotoxicity and renal pathophysiology: A contemporary perspective. *Toxicol Sci* 164(2):379-390. <https://doi.org/10.1093/toxsci/kfy159>.
- Barr RD, Woodger BA, Rees PH. 1973. Levels of mercury in urine correlated with the use of skin lightening creams. *Am J Clin Pathol* 59(1):36-40. <https://doi.org/10.1093/ajcp/59.1.36>.
- Barregard L. 1993. Biological monitoring of exposure to mercury vapor. *Scand J Work Environ Health* 19(Suppl 1):45-49.
- Barregard L, Sallsten G, Jarvholm B. 1990. Mortality and cancer incidence in chloralkali workers exposed to inorganic mercury. *Br J Ind Med* 47(2):99-104.
- Barregard L, Trachtenberg F, McKinlay S. 2008. Renal effects of dental amalgam in children: The New England children's amalgam trial. *Environ Health Perspect* 116(3):394-399. <https://doi.org/10.1289/ehp.10504>.
- Barregard L, Hogstedt B, Schutz A, et al. 1991. Effects of occupational exposure to mercury vapor on lymphocyte micronuclei. *Scand J Work Environ Health* 17(4):263-268. <https://doi.org/10.5271/sjweh.1704>.
- Barregard L, Sallsten G, Schutz A, et al. 1992. Kinetics of mercury in blood and urine after brief occupational exposure. *Arch Environ Health* 47(3):176-184. <https://doi.org/10.1080/00039896.1992.9938347>.
- Barregard L, Lindstedt G, Schutz A, et al. 1994a. Endocrine function in mercury exposed chloralkali workers. *Occup Environ Med* 51(8):536-540. <https://doi.org/10.1136/oem.51.8.536>.
- Barregard L, Horvat M, Schutz A. 1994b. No indication of in vivo methylation of inorganic mercury in chloralkali workers. *Environ Res* 67(2):160-167. <https://doi.org/10.1006/enrs.1994.1071>.
- Barregard L, Quelquejeu G, Sallsten G, et al. 1996. Dose-dependent elimination kinetics for mercury in urine: Observations in subjects with brief but high-level exposure. *Int Arch Occup Environ Health* 68(5):345-348. <https://doi.org/10.1007/bf00409421>.
- Barregard L, Eneström S, Ljunghusen O, et al. 1997. A study of autoantibodies and circulating immune complexes in mercury-exposed chloralkali workers. *Int Arch Occup Environ Health* 70(2):101-106. <https://doi.org/10.1007/s004200050193>.
- Barregard L, Horvat M, Mazzolai B, et al. 2006. Urinary mercury in people living near point sources of mercury emissions. *Sci Total Environ* 368(1):326-334. <https://doi.org/10.1016/j.scitotenv.2005.08.048>.

8. REFERENCES

- Basta PC, Viana PVS, Vasconcellos ACS, et al. 2021. Mercury exposure in Munduruku indigenous communities from Brazilian Amazon: Methodological background and an overview of the principal results. *Int J Environ Res Public Health* 18(17):9222. <https://doi.org/10.3390/ijerph18179222>.
- Bast-Pettersen R, Ellingsen DG, Efskind J, et al. 2005. A neurobehavioral study of chloralkali workers after the cessation of exposure to mercury vapor. *Neurotoxicology* 26(3):427-437. <https://doi.org/10.1016/j.neuro.2005.03.006>.
- Basu N, Scheuhammer AM, Rouvinen-Watt K, et al. 2010. In vitro and whole animal evidence that methylmercury disrupts GABAergic systems in discrete brain regions in captive mink. *Comp Biochem Physiol C Toxicol Pharmacol* 151(3):379-385. <https://doi.org/10.1016/j.cbpc.2010.01.001>.
- Basu N, Goodrich JM, Head J. 2014. Ecogenetics of mercury: From genetic polymorphisms and epigenetics to risk assessment and decision-making. *Environ Toxicol Chem* 33(6):1248-1258. <https://doi.org/10.1002/etc.2375>.
- Baswan S, Kasting GB, Li SK, et al. 2017. Understanding the formidable nail barrier: A review of the nail microstructure, composition and diseases. *Mycoses* 60(5):284-295. <https://doi.org/10.1111/myc.12592>.
- Bates MN, Fawcett J, Garrett N, et al. 2004. Health effects of dental amalgam exposure: A retrospective cohort study. *Int J Epidemiol* 33(4):894-902. <https://doi.org/10.1093/ije/dyh164>.
- Bautista LE, Stein JH, Morgan BJ, et al. 2009. Association of blood and hair mercury with blood pressure and vascular reactivity. *WMJ* 108(5):250-252.
- BDI. 2011. Great Lakes mercury connections: The extent and effects of mercury pollution in the Great Lakes region. Gorham, ME: Biodiversity Research Institute. <https://www.glc.org/library/2011-great-lakes-mercury-connections>. January 19, 2021.
- Beauchamp G, Kusin S, Elinder CG. 2021. Mercury toxicity. UpToDate. Wolters Kluwer.
- Bedir Findik R, Celik HT, Ersoy AO, et al. 2016. Mercury concentration in maternal serum, cord blood, and placenta in patients with amalgam dental fillings: Effects on fetal biometric measurements. *J Matern Fetal Neonatal Med* 29(22):3665-3669. <https://doi.org/10.3109/14767058.2016.1140737>.
- Behzadfar L, Hassani S, Feizpour H, et al. 2020. Effects of mercuric chloride on spatial memory deficit-induced by beta-amyloid and evaluation of mitochondrial function markers in the hippocampus of rats. *Metallomics* 12(1):144-153. <https://doi.org/10.1039/c9mt00161a>.
- Bell BC, Zhu J, Wei Y. 2023. Urinary concentrations of endocrine-disrupting metals and prevalent breast cancer in US women. *Biol Trace Elem Res* 201(9):4230-4237. <https://doi.org/10.1007/s12011-022-03512-z>.
- Bellanger M, Pichery C, Aerts D, et al. 2013. Economic benefits of methylmercury exposure control in Europe: Monetary value of neurotoxicity prevention. *Environ Health* 12:3. <https://doi.org/10.1186/1476-069x-12-3>.
- Belles M, Albina ML, Sanchez DJ, et al. 2002. Interactions in developmental toxicology: Effects of concurrent exposure to lead, organic mercury, and arsenic in pregnant mice. *Arch Environ Contam Toxicol* 42(1):93-98. <https://doi.org/10.1007/s002440010296>.
- Bellinger DC. 2012. Comparing the population neurodevelopmental burdens associated with children's exposures to environmental chemicals and other risk factors. *Neurotoxicology* 33(4):641-643. <https://doi.org/10.1016/j.neuro.2012.04.003>.
- Bellinger DC, Trachtenberg F, Barregard L, et al. 2006. Neuropsychological and renal effects of dental amalgam in children: a randomized clinical trial. *JAMA* 295(15):1775-1783. <https://doi.org/10.1001/jama.295.15.1775>.
- Bellinger DC, Daniel D, Trachtenberg F, et al. 2007a. Dental amalgam restorations and children's neuropsychological function: the New England Children's Amalgam Trial. *Environ Health Perspect* 115(3):440-446. <https://doi.org/10.1289/ehp.9497>.
- Bellinger DC, Trachtenberg F, Daniel D, et al. 2007b. A dose-effect analysis of children's exposure to dental amalgam and neuropsychological function: the New England Children's Amalgam Trial. *J Am Dent Assoc* 138(9):1210-1216. <https://doi.org/10.14219/jada.archive.2007.0345>.

8. REFERENCES

- Bellinger DC, Trachtenberg F, Zhang A, et al. 2008. Dental amalgam and psychosocial status: the New England Children's Amalgam Trial. *J Dent Res* 87(5):470-474. <https://doi.org/10.1177/154405910808700504>.
- Bellinger DC, Devleeschauwer B, O'Leary K, et al. 2019. Global burden of intellectual disability resulting from prenatal exposure to methylmercury, 2015. *Environ Res* 170:416-421. <https://doi.org/10.1016/j.envres.2018.12.042>.
- Bellum S, Thuett KA, Grajeda R, et al. 2007. Coordination deficits induced in young adult mice treated with methylmercury. *Int J Toxicol* 26(2):115-121. <https://doi.org/10.1080/10915810701225190>.
- Bellum S, Thuett KA, Bawa B, et al. 2013. The effect of methylmercury exposure on behavior and cerebellar granule cell physiology in aged mice. *J Appl Toxicol* 33(9):959-969. <https://doi.org/10.1002/jat.2786>.
- Ben-Ozer EY, Rosenspire AJ, McCabe MJ, et al. 2000. Mercuric chloride damages cellular DNA by a non-apoptotic mechanism. *Mutat Res* 470(1):19-27.
- Bergdahl IA, Ahlqwist M, Barregard L, et al. 2013. Mercury in serum predicts low risk of death and myocardial infarction in Gothenburg women. *Int Arch Occup Environ Health* 86(1):71-77. <https://doi.org/10.1007/s00420-012-0746-8>.
- Berglund M, Lind B, Bjornberg KA, et al. 2005. Inter-individual variations of human mercury exposure biomarkers: a cross-sectional assessment. *Environ Health* 4:20. <https://doi.org/10.1186/1476-069x-4-20>.
- Bergstrand A, Friberg L, Odeblad E. 1958. Localization of mercury in the kidneys after subcutaneous administration. A study on rabbits with mercuric chloride and phenylmercuric acetate. *Arch Ind Health* 17(3):253-256.
- Berky AJ, Ryde IT, Feingold B, et al. 2019. Predictors of mitochondrial DNA copy number and damage in a mercury-exposed rural Peruvian population near artisanal and small-scale gold mining: An exploratory study. *Environ Mol Mutagen* 60(2):197-210. <https://doi.org/10.1002/em.22244>.
- Berlin M, Ullberg S. 1963a. Accumulation and retention of mercury in the mouse. I. An autoradiographic study after a single intravenous injection of mercuric chloride. *Arch Environ Health* 6:589-601. <https://doi.org/10.1080/00039896.1963.10663447>.
- Berlin M, Ullberg S. 1963b. Accumulation and retention of mercury in the mouse. II. An autoradiographic comparison of phenylmercuric acetate with inorganic mercury. *Arch Environ Health* 6:602-609. <https://doi.org/10.1080/00039896.1963.10663448>.
- Berlin M, Ullberg S. 1963c. Accumulation and retention of mercury in the mouse. III. An autoradiographic comparison of methylmercuric dicyandiamide with inorganic mercury. *Arch Environ Health* 6:610-616. <https://doi.org/10.1080/00039896.1963.10663449>.
- Berlin M, Jerksell LG, von Ubisch H. 1966. Uptake and retention of mercury in the mouse brain. A comparison of exposure to mercury vapor and intravenous injection of mercuric salt. *Arch Environ Health* 12(1):33-42.
- Berlin MH, Nordberg GF, Serenius F. 1969a. On the site and mechanism of mercury vapor resorption in the lung. A study in the guinea pig using mercuric nitrate Hg 203. *Arch Environ Health* 18(1):42-50.
- Berlin M, Fazackerley J, Nordberg G. 1969b. The uptake of mercury in the brains of mammals exposed to mercury vapor and to mercuric salts. *Arch Environ Health* 18(5):719-729.
- Berlin M, Carlson J, Norseth T. 1975. Dose-dependence of methylmercury metabolism: A study of distribution: Biotransformation and excretion in the squirrel monkey. *Arch Environ Health* 30(6):307-313.
- Berlin M, Zalups RK, Fowler BA. 2015. Mercury. In: Nordberg GF, Fowler BA, Nordberg M, eds. *Handbook on the toxicology of metals*. Boston, MA: Academic Press, 1013-1075. <https://doi.org/10.1016/B978-0-444-59453-2.00046-9>.
- Berndt WO, Baggett JM, Blacker A, et al. 1985. Renal glutathione and mercury uptake by kidney. *Fundam Appl Toxicol* 5(5):832-839. [https://doi.org/10.1016/0272-0590\(85\)90166-6](https://doi.org/10.1016/0272-0590(85)90166-6).

8. REFERENCES

- Berthet A, de Batz A, Tardif R, et al. 2010. Impact of biological and environmental variabilities on biological monitoring--an approach using toxicokinetic models. *J Occup Environ Hyg* 7(3):177-184. <https://doi.org/10.1080/15459620903530052>.
- Berthoud HR, Garman RH, Weiss B. 1976. Food intake, body weight, and brain histopathology in mice following chronic methylmercury treatment. *Toxicol Appl Pharmacol* 36(1):19-30. [https://doi.org/10.1016/0041-008x\(76\)90023-5](https://doi.org/10.1016/0041-008x(76)90023-5).
- Betti C, Davini T, Barale R. 1992. Genotoxic activity of methyl mercury chloride and dimethyl mercury in human lymphocytes. *Mutat Res* 281(4):255-260.
- Beusterien KM, Etzel RA, Agocs MM, et al. 1991. Indoor air mercury concentrations following application of interior latex paint. *Arch Environ Contam Toxicol* 21(1):62-64. <https://doi.org/10.1007/bf01055557>.
- Beyrouthy P, Stamler CJ, Liu JN, et al. 2006. Effects of prenatal methylmercury exposure on brain monoamine oxidase activity and neurobehaviour of rats. *Neurotoxicol Teratol* 28(2):251-259. <https://doi.org/10.1016/j.ntt.2005.12.007>.
- Bhan A, Sarkar NN. 2005. Mercury in the environment: effect on health and reproduction. *Rev Environ Health* 20(1):39-56.
- Bhowmik N, Patra M. 2015. Assessment of genotoxicity of inorganic mercury in rats in vivo using both chromosomal aberration and comet assays. *Toxicol Ind Health* 31(7):588-594. <https://doi.org/10.1177/0748233712469656>.
- Bilak Ş, Önderci M, Şimşek A. 2019. Evaluation of amalgam-related retinal neurotoxicity with optical coherence tomography findings. *Hum Exp Toxicol* 38(7):814-822. <https://doi.org/10.1177/0960327119842637>.
- Birch RJ, Bigler J, Rogers JW, et al. 2014. Trends in blood mercury concentrations and fish consumption among U.S. women of reproductive age, NHANES, 1999-2010. *Environ Res* 133:431-438. <https://doi.org/10.1016/j.envres.2014.02.001>.
- Birke G, Johnels AG, Plantin LO, et al. 1972. Studies on humans exposed to methyl mercury through fish consumption. *Arch Environ Health* 25(2):77-91.
- Biro L, Klein WP. 1967. Unusual complications of mercurial (cinnabar) tattoo. *Arch Dermatol* 96(2):165. <https://doi.org/10.1001/archderm.1967.01610020057017>.
- Bittencourt LO, Dionizio A, Nascimento PC, et al. 2019. Proteomic approach underlying the hippocampal neurodegeneration caused by low doses of methylmercury after long-term exposure in adult rats. *Metallomics* 11(2):390-403. <https://doi.org/10.1039/c8mt00297e>.
- Bittencourt LO, Chemelo VS, Aragão WAB, et al. 2021. From molecules to behavior in long-term inorganic mercury intoxication: Unraveling proteomic features in cerebellar neurodegeneration of rats. *Int J Mol Sci* 23(1):111. <https://doi.org/10.3390/ijms23010111>.
- Bittencourt LO, Matta PPM, Nascimento PC, et al. 2022. Deciphering the global proteomic profile involved in methylmercury-induced cerebellar neurodegeneration and motor dysfunction in adult rats. *Toxics* 10(9):531. <https://doi.org/10.3390/toxics10090531>.
- Bittner AC, Echeverria D, Woods JS, et al. 1998. Behavioral effects of low-level exposure to Hg⁰ among dental professionals: a cross-study evaluation of psychomotor effects. *Neurotoxicol Teratol* 20(4):429-439. [https://doi.org/10.1016/s0892-0362\(98\)00006-3](https://doi.org/10.1016/s0892-0362(98)00006-3).
- Bjorkman S. 2004. Prediction of drug disposition in infants and children by means of physiologically based pharmacokinetic (PBPK) modelling: theophylline and midazolam as model drugs. *Br J Clin Pharmacol* 59(6):691-704. <https://doi.org/10.1111/j.1365-2125.2004.02225.x>.
- Bjorkman L, Sandborgh-Englund G, Ekstrand J. 1997. Mercury in saliva and feces after removal of amalgam fillings. *Toxicol Appl Pharmacol* 144(1):156-162. <https://doi.org/10.1006/taap.1997.8128>.
- Bjorkman L, Lundekvam BF, Laegreid T, et al. 2007. Mercury in human brain, blood, muscle and toenails in relation to exposure: an autopsy study. *Environ Health* 6:30. <https://doi.org/10.1186/1476-069x-6-30>.
- Bjornberg A, Hakanson L, Lundbergh K. 1988. A theory on the mechanisms regulating the bioavailability of mercury in natural waters. *Environ Pollut* 49(1):53-62.

8. REFERENCES

- Bjornberg KA, Vahter M, Petersson-Grawe K, et al. 2003. Methyl mercury and inorganic mercury in Swedish pregnant women and in cord blood: influence of fish consumption. *Environ Health Perspect* 111(4):637-641.
- Bjornberg KA, Vahter M, Berglund B, et al. 2005. Transport of methylmercury and inorganic mercury to the fetus and breast-fed infant. *Environ Health Perspect* 113(10):1381-1385.
- Blakley BR, Sisodia CS, Mukkur TK. 1980. The effect of methylmercury, tetraethyl lead, and sodium arsenite on the humoral immune response in mice. *Toxicol Appl Pharmacol* 52(2):245-254. [https://doi.org/10.1016/0041-008x\(80\)90111-8](https://doi.org/10.1016/0041-008x(80)90111-8).
- Blanc P, Burnol A, Marty N, et al. 2018. Methylmercury complexes: Selection of thermodynamic properties and application to the modelling of a column experiment. *Sci Total Environ* 621:368-375. <https://doi.org/10.1016/j.scitotenv.2017.11.259>.
- Blanchet C, Rochette L. 2008. Qanuippitaa? How are we? Nutrition and food consumption among the Inuit of Nunavik. Quebec: Institut National de Santé Publique du Québec. https://www.inspq.qc.ca/pdf/publications/762_ESI_Nutrition_Report_MA.pdf. January 18, 2021.
- Blayney MB, Winn JS, Nierenberg DW. 1997. Handling dimethylmercury. *Chem Eng News* 75(19):7.
- Bloom NS. 1992. On the chemical form of mercury in edible fish and marine invertebrate tissue. *Can J Fish Aquat Sci* 49(5):1010-1017. <https://doi.org/10.1139/f92-113>.
- Bloom NS, Effler SW. 1990. Seasonal variability in the mercury speciation of Onondaga Lake (New York). *Water Air Soil Pollut* 53(3-4):251-265. <https://doi.org/10.1007/bf00170741>.
- Bloom MS, Buck Louis GM, Sundaram R, et al. 2015. Birth outcomes and background exposures to select elements, the Longitudinal Investigation of Fertility and the Environment (LIFE). *Environ Res* 138:118-129. <https://doi.org/10.1016/j.envres.2015.01.008>.
- Bluhm RE, Bobbitt RG, Welch LW, et al. 1992. Elemental mercury vapour toxicity, treatment, and prognosis after acute, intensive exposure in chloralkali plant workers. Part I: History, neuropsychological findings and chelator effects. *Hum Exp Toxicol* 11(3):201-210. <https://doi.org/10.1177/096032719201100308>.
- Blume HP, Brümmer G. 1991. Prediction of heavy metal behavior in soil by means of simple field tests. *Ecotoxicol Environ Saf* 22(2):164-174. [https://doi.org/10.1016/0147-6513\(91\)90056-u](https://doi.org/10.1016/0147-6513(91)90056-u).
- Bodaly RAD. 2018. Mercury contamination of the Penobscot River Estuary, Maine, USA. *Sci Total Environ* 639:1077-1078. <https://doi.org/10.1016/j.scitotenv.2018.05.127>.
- Boersma ER, Lanting CI. 2000. Environmental exposure to polychlorinated biphenyls (PCBs) and dioxins. Consequences for longterm neurological and cognitive development of the child lactation. *Adv Exp Med Biol* 478:271-287.
- Boischio AA, Cernichiari E, Henshel D. 2000. Segmental hair mercury evaluation of a single family along the upper Madeira basin, Brazilian Amazon. *Cad Saude Publica* 16(3):681-686.
- Boogaard PJ, Houtsma AT, Journee HL, et al. 1996. Effects of exposure to elemental mercury on the nervous system and the kidneys of workers producing natural gas. *Arch Environ Health* 51(2):108-115. <https://doi.org/10.1080/00039896.1996.9936002>.
- Boomhower SR, Newland MC. 2019. Adolescent methylmercury exposure: Behavioral mechanisms and effects of sodium butyrate in mice. *Neurotoxicology* 70:33-40. <https://doi.org/10.1016/j.neuro.2018.10.011>.
- Borghese MM, Fisher M, Ashley-Martin J, et al. 2023. Individual, independent, and joint associations of toxic metals and manganese on hypertensive disorders of pregnancy: Results from the MIREC Canadian pregnancy cohort. *Environ Health Perspect* 131(4):47014. <https://doi.org/10.1289/ehp10825>.
- Bornhausen M, Musch HR, Greim H. 1980. Operant behavior performance changes in rats after prenatal methylmercury exposure. *Toxicol Appl Pharmacol* 56(3):305-310. [https://doi.org/10.1016/0041-008x\(80\)90062-9](https://doi.org/10.1016/0041-008x(80)90062-9).
- Boscolo P, Carmignani M, Giuliano G, et al. 1989. Peripheral catecholaminergic mechanisms and baroreflex pathways are involved in vascular and cardiac effects of long-term exposure to inorganic

8. REFERENCES

- mercury in rats. In: Strano A, Novo S, eds. *Advances in vascular pathology*. Amsterdam: Elsevier Science Publisher, 1061-1066.
- Boucher O, Bastien CH, Saint-Amour D, et al. 2010. Prenatal exposure to methylmercury and PCBs affects distinct stages of information processing: an event-related potential study with Inuit children. *Neurotoxicology* 31(4):373-384. <https://doi.org/10.1016/j.neuro.2010.04.005>.
- Boucher O, Burden MJ, Muckle G, et al. 2012a. Response inhibition and error monitoring during a visual go/no-go task in Inuit children exposed to lead, polychlorinated biphenyls, and methylmercury. *Environ Health Perspect* 120(4):608-615. <https://doi.org/10.1289/ehp.1103828>.
- Boucher O, Jacobson SW, Plusquellec P, et al. 2012b. Prenatal methylmercury, postnatal lead exposure, and evidence of attention deficit/hyperactivity disorder among Inuit children in Arctic Quebec. *Environ Health Perspect* 120(10):1456-1461. <https://doi.org/10.1289/ehp.1204976>.
- Boucher O, Muckle G, Jacobson JL, et al. 2014. Domain-specific effects of prenatal exposure to PCBs, mercury, and lead on infant cognition: Results from the Environmental Contaminants and Child Development Study in Nunavik. *Environ Health Perspect* 122(3):310-316. <https://doi.org/10.1289/ehp.1206323>.
- Boucher O, Muckle G, Ayotte P, et al. 2016. Altered fine motor function at school age in Inuit children exposed to PCBs, methylmercury, and lead. *Environ Int* 95:144-151. <https://doi.org/10.1016/j.envint.2016.08.010>.
- Boujbiha MA, Hamden K, Guermazi F, et al. 2009. Testicular toxicity in mercuric chloride treated rats: Association with oxidative stress. *Reprod Toxicol* 28(1):81-89. <https://doi.org/10.1016/j.reprotox.2009.03.011>.
- Boujbiha MA, Hamden K, Guermazi F, et al. 2011. Impairment of spermatogenesis in rats by mercuric chloride: Involvement of low 17beta-estradiol level in induction of acute oxidative stress. *Biol Trace Elem Res* 142(3):598-610. <https://doi.org/10.1007/s12011-010-8774-2>.
- Boujbiha MA, Ben Salah G, Ben Feleh A, et al. 2012. Hematotoxicity and genotoxicity of mercuric chloride following subchronic exposure through drinking water in male rats. *Biol Trace Elem Res* 148(1):76-82. <https://doi.org/10.1007/s12011-012-9342-8>.
- Bourdineaud JP, Fujimura M, Laclau M, et al. 2011. Deleterious effects in mice of fish-associated methylmercury contained in a diet mimicking the Western populations' average fish consumption. *Environ Int* 37(2):303-313. <https://doi.org/10.1016/j.envint.2010.09.003>.
- Bourgeois M, Dooms-Goossens A, Knockaert D, et al. 1986. Mercury intoxication after topical application of a metallic mercury ointment. *Dermatology* 172(1):48-51. <https://doi.org/10.1159/000249292>.
- Bowman KL, Lamborg CH, Agather AM. 2020. A global perspective on mercury cycling in the ocean. *Sci Total Environ* 710:136166. <https://doi.org/10.1016/j.scitotenv.2019.136166>.
- Boyd ES, Barkay T. 2012. The mercury resistance operon: from an origin in a geothermal environment to an efficient detoxification machine. *Front Microbiol* 3:349. <https://doi.org/10.3389/fmicb.2012.00349>.
- Branco V, Carvalho C. 2019. The thioredoxin system as a target for mercury compounds. *Biochim Biophys Acta Gen Subj* 1863(12):129255. <https://doi.org/10.1016/j.bbagen.2018.11.007>.
- Branco V, Ramos P, Canario J, et al. 2012. Biomarkers of adverse response to mercury: Histopathology versus thioredoxin reductase activity. *J Biomed Biotechnol* 2012:1-9. <https://doi.org/10.1155/2012/359879>.
- Bressa G, Cima L, Costa P. 1988. Bioaccumulation of mercury in the mushroom *Pleurotus ostreatus*. *Ecotoxicol Environ Saf* 16(2):85-89.
- Bridges CC, Zalups RK. 2005. Molecular and ionic mimicry and the transport of toxic metals. *Toxicol Appl Pharmacol* 204(3):274-308. <https://doi.org/10.1016/j.taap.2004.09.007>.
- Bridges CC, Zalups RK. 2010. Transport of inorganic mercury and methylmercury in target tissues and organs. *J Toxicol Environ Health B Crit Rev* 13(5):385-410. <https://doi.org/10.1080/10937401003673750>.

8. REFERENCES

- Bridges CC, Zalups RK. 2017. Mechanisms involved in the transport of mercuric ions in target tissues. *Arch Toxicol* 91(1):63-81. <https://doi.org/10.1007/s00204-016-1803-y>.
- Bridges CC, Bauch C, Verrey F, et al. 2004. Mercuric conjugates of cysteine are transported by the amino acid transporter system b⁰⁺: implications of molecular mimicry. *J Am Soc Nephrol* 15(3):663-673.
- Bridges CC, Joshee L, Zalups RK. 2011. MRP2 and the handling of mercuric ions in rats exposed acutely to inorganic and organic species of mercury. *Toxicol Appl Pharmacol* 251(1):50-58. <https://doi.org/10.1016/j.taap.2010.11.015>.
- Bridges CC, Joshee L, Zalups RK. 2012. Placental and fetal disposition of mercuric ions in rats exposed to methylmercury: Role of Mrp2. *Reprod Toxicol* 34(4):628-634. <https://doi.org/10.1016/j.reprotox.2012.10.001>.
- Bridges CC, Joshee L, van den Heuvel JJ, et al. 2013. Glutathione status and the renal elimination of inorganic mercury in the Mrp2^{-/-} mouse. *PLoS ONE* 8(9):e73559. <https://doi.org/10.1371/journal.pone.0073559>.
- Brosset C, Lord E. 1991. Mercury in precipitation and ambient air: A new scenario. *Water Air Soil Pollut* 56(0):493-506.
- Brown JR, Shockley P. 1982. Serum albumin: structure and characterization of its ligand binding sites. In: Jost PC, Griffith OH, eds. *Lipid-protein interactions*. Vol. 1. New York, NY: Wiley, Inc., 25-68.
- Brown E, Hopper J, Hodges JL, et al. 1962. Red cell, plasma, and blood volume in healthy women measured by radiochromium cell-labeling and hematocrit. *J Clin Invest* 41(12):2182-2190. <https://doi.org/10.1172/jci104677>.
- Bryan GW, Langston WJ. 1992. Bioavailability, accumulation and effects of heavy metals in sediments with special reference to United Kingdom estuaries: A review. *Environ Pollut* 76(2):89-131.
- Bryan SE, Guy AL, Hardy KJ. 1974. Metal constituents of chromatin. Interaction of mercury in vivo. *Biochemistry* 13(2):313-319. <https://doi.org/10.1021/bi00699a013>.
- Bucio L, Garcia C, Souza V, et al. 1999. Uptake, cellular distribution and DNA damage produced by mercuric chloride in a human fetal hepatic cell line. *Mutat Res* 423(1-2):65-72.
- Buck Louis GM, Sundaram R, Schisterman EF, et al. 2012. Heavy metals and couple fecundity, the LIFE Study. *Chemosphere* 87(11):1201-1207. <https://doi.org/10.1016/j.chemosphere.2012.01.017>.
- Buck Louis GM, Smarr MM, Sundaram R, et al. 2017. Low-level environmental metals and metalloids and incident pregnancy loss. *Reprod Toxicol* 69:68-74. <https://doi.org/10.1016/j.reprotox.2017.01.011>.
- Budavari S, ed. 1989. Mercury. In: *Merck index: an encyclopedia of chemicals, drugs, and biologicals*. Rahway, NJ: Merck & Co., Inc., 923-927.
- Budtz-Jorgensen E, Grandjean P, Jorgensen PJ, et al. 2004. Association between mercury concentrations in blood and hair in methylmercury-exposed subjects at different ages. *Environ Res* 95(3):385-393. <https://doi.org/10.1016/j.envres.2003.11.001>.
- Buhari O, Dayyab FM, Igbinoba O, et al. 2020. The association between heavy metal and serum cholesterol levels in the US population: National Health and Nutrition Examination Survey 2009-2012. *Hum Exp Toxicol* 39(3):355-364. <https://doi.org/10.1177/0960327119889654>.
- Bulat P, Dujic I, Potkonjak B, et al. 1998. Activity of glutathione peroxidase and superoxide dismutase in workers occupationally exposed to mercury. *Int Arch Occup Environ Health* 71(Suppl):S37-S39.
- Bulka CM, Persky VW, Daviglius ML, et al. 2019. Multiple metal exposures and metabolic syndrome: A cross-sectional analysis of the National Health and Nutrition Examination Survey 2011-2014. *Environ Res* 168:397-405. <https://doi.org/10.1016/j.envres.2018.10.022>.
- Burbacher TM, Mottet NK. 1988. The long-term physical, behavioral, and sexual maturation of *Macaca fascicularis* exposed in utero to methylmercury [abstract]. *Teratology* 37(5):524.
- Burbacher TM, Monnett C, Grant KS, et al. 1984. Methylmercury exposure and reproductive dysfunction in the nonhuman primate. *Toxicol Appl Pharmacol* 75(1):18-24. [https://doi.org/10.1016/0041-008x\(84\)90071-1](https://doi.org/10.1016/0041-008x(84)90071-1).

8. REFERENCES

- Burbacher TM, Grant KS, Mayfield DB, et al. 2005. Prenatal methylmercury exposure affects spatial vision in adult monkeys. *Toxicol Appl Pharmacol* 208(1):21-28. <https://doi.org/10.1016/j.taap.2005.01.011>.
- Burger J, Cooper K, Gochfeld M. 1992. Exposure assessment for heavy metal ingestion from a sport fish in Puerto Rico: Estimating risk for local fishermen. *J Toxicol Environ Health* 36(4):355-365. <https://doi.org/10.1080/15287399209531644>.
- Burke J, Hoyer M, Keeler G, et al. 1995. Wet deposition of mercury and ambient mercury concentrations at a site in the Lake Champlain basin. *Water Air Soil Pollut* 80:353-362.
- Burns DA, Woodruff LG, Bradley PM, et al. 2014. Mercury in the soil of two contrasting watersheds in the eastern United States. *PLoS ONE* 9(2):e86855. <https://doi.org/10.1371/journal.pone.0086855>.
- Byczkowski JZ, Lipscomb JC. 2001. Physiologically based pharmacokinetic modeling of the lactational transfer of methylmercury. *Risk Anal* 21(5):869-882.
- Byrns MC, Pennings TM. 2017. Environmental toxicology: Carcinogens and heavy metals. In: Brunton LL, Hilal-Dandan R, Knollman BC, eds. *Goodman & Gilman's: The pharmacological basis of therapeutics*. 13th ed. McGraw Hill,
- Cagiano R, De Salvia MA, Renna G, et al. 1990. Evidence that exposure to methyl mercury during gestation induces behavioral and neurochemical changes in offspring of rats. *Neurotoxicol Teratol* 12(1):23-28. [https://doi.org/10.1016/0892-0362\(90\)90108-o](https://doi.org/10.1016/0892-0362(90)90108-o).
- Caito SW, Jackson BP, Punshon T, et al. 2018. Editor's highlight: Variation in methylmercury metabolism and elimination status in humans following fish consumption. *Toxicol Sci* 161(2):443-453. <https://doi.org/10.1093/toxsci/kfx226>.
- Cakmak S, Mitchell K, Lukina A, et al. 2023. Do blood metals influence lipid profiles? Findings of a cross-sectional population-based survey. *Environ Res* 231(Pt 2):116107. <https://doi.org/10.1016/j.envres.2023.116107>.
- Calamandrei G, Ricceri L, Meccia E, et al. 2020. Pregnancy exposome and child psychomotor development in three European birth cohorts. *Environ Res* 181:108856. <https://doi.org/10.1016/j.envres.2019.108856>.
- Calao-Ramos C, Bravo AG, Paternina-Uribe R, et al. 2021. Occupational human exposure to mercury in artisanal small-scale gold mining communities of Colombia. *Environ Int* 146:106216. <https://doi.org/10.1016/j.envint.2020.106216>.
- Callan AC, Devine A, Qi L, et al. 2015. Investigation of the relationship between low environmental exposure to metals and bone mineral density, bone resorption and renal function. *Int J Hyg Environ Health* 218(5):444-451. <https://doi.org/10.1016/j.ijheh.2015.03.010>.
- Calogero AE, Fiore M, Giacone F, et al. 2021. Exposure to multiple metals/metalloids and human semen quality: A cross-sectional study. *Ecotoxicol Environ Saf* 215:112165. <https://doi.org/10.1016/j.ecoenv.2021.112165>.
- Cañadas P, Lantigua Y, Enríquez-de-Salamanca A, et al. 2021. Ocular surface pathology in patients suffering from mercury intoxication. *Diagnostics (Basel)* 11(8):1326. <https://doi.org/10.3390/diagnostics11081326>.
- Cannon VT, Barfuss DW, Zalups RK. 2000. Molecular homology and the luminal transport of Hg²⁺ in the renal proximal tubule. *J Am Soc Nephrol* 11(3):394-402.
- Cannon VT, Zalups RK, Barfuss DW. 2001. Amino acid transporters involved in luminal transport of mercuric conjugates of cysteine in rabbit proximal tubule. *J Pharmacol Exp Ther* 298(2):780-789.
- Cantoni O, Costa M. 1983. Correlations of DNA strand breaks and their repair with cell survival following acute exposure to mercury(II) and X-rays. *Mol Pharmacol* 24(1):84-89.
- Cantoni O, Evans RM, Costa M. 1982. Similarity in the acute cytotoxic response of mammalian cells to mercury (II) and X-rays: DNA damage and glutathione depletion. *Biochem Biophys Res Commun* 108(2):614-619. [https://doi.org/10.1016/0006-291x\(82\)90873-7](https://doi.org/10.1016/0006-291x(82)90873-7).
- Cantoni O, Christie NT, Robison SH, et al. 1984a. Characterization of DNA lesions produced by HgCl₂ in cell culture systems. *Chem Biol Interact* 49(1-2):209-224.

8. REFERENCES

- Cantoni O, Christie NT, Swann A, et al. 1984b. Mechanism of HgCl₂ cytotoxicity in cultured mammalian cells. *Mol Pharmacol* 26(2):360-368.
- Canto-Pereira LH, Lago M, Costa MF, et al. 2005. Visual impairment on dentists related to occupational mercury exposure. *Environ Toxicol Pharmacol* 19(3):517-522. <https://doi.org/10.1016/j.etap.2004.12.015>.
- Cappelletti S, Piacentino D, Fineschi V, et al. 2019. Mercuric chloride poisoning: symptoms, analysis, therapies, and autoptic findings. A review of the literature. *Crit Rev Toxicol* 49(4):329-341. <https://doi.org/10.1080/10408444.2019.1621262>.
- Cardenas A, Roels H, Bernard AM, et al. 1993. Markers of early renal changes induced by industrial pollutants. I. Application to workers exposed to mercury vapour. *Br J Ind Med* 50(1):17-27. <https://doi.org/10.1136/oem.50.1.17>.
- Cardenas A, Allard C, Doyon M, et al. 2016. Validation of a DNA methylation reference panel for the estimation of nucleated cells types in cord blood. *Epigenetics* 11(11):773-779. <https://doi.org/10.1080/15592294.2016.1233091>.
- Cardenas A, Rifas-Shiman SL, Agha G, et al. 2017a. Persistent DNA methylation changes associated with prenatal mercury exposure and cognitive performance during childhood. *Sci Rep* 7(1):288. <https://doi.org/10.1038/s41598-017-00384-5>.
- Cardenas A, Rifas-Shiman SL, Godderis L, et al. 2017b. Prenatal exposure to mercury: Associations with global DNA methylation and hydroxymethylation in cord blood and in childhood. *Environ Health Perspect* 125(8):087022. <https://doi.org/10.1289/EHP1467>.
- Carmignani M, Boscolo P. 1984. Cardiovascular homeostasis in rats chronically exposed to mercuric chloride. *Arch Toxicol Suppl* 7:383-388. https://doi.org/10.1007/978-3-642-69132-4_66.
- Carmignani M, Boscolo P, Preziosi P. 1989. Renal ultrastructural alterations and cardiovascular functional changes in rats exposed to mercuric chloride. *Arch Toxicol Suppl* 13:353-356. https://doi.org/10.1007/978-3-642-74117-3_68.
- Carmignani M, Boscolo P, Artese L, et al. 1992. Renal mechanisms in the cardiovascular effects of chronic exposure to inorganic mercury in rats. *Br J Ind Med* 49(4):226-232. <https://doi.org/10.1136/oem.49.4.226>.
- Carmona ER, Kossatz E, Creus A, et al. 2008. Genotoxic evaluation of two mercury compounds in the *Drosophila* wing spot test. *Chemosphere* 70(10):1910-1914. <https://doi.org/10.1016/j.chemosphere.2007.07.032>.
- Carneiro MF, Grotto D, Barbosa F. 2014. Inorganic and methylmercury levels in plasma are differentially associated with age, gender, and oxidative stress markers in a population exposed to mercury through fish consumption. *J Toxicol Environ Health A* 77(1-3):69-79. <https://doi.org/10.1080/15287394.2014.865584>.
- Carocci A, Rovito N, Sinicropi MS, et al. 2014. Mercury toxicity and neurodegenerative effects. *Rev Environ Contam Toxicol* 229:1-18. https://doi.org/10.1007/978-3-319-03777-6_1.
- Carrasco P, Estarlich M, Iñiguez C, et al. 2021. Pre and postnatal exposure to mercury and respiratory health in preschool children from the Spanish INMA Birth Cohort Study. *Sci Total Environ* 782:146654. <https://doi.org/10.1016/j.scitotenv.2021.146654>.
- Carratu MR, Borracci P, Coluccia A, et al. 2006. Acute exposure to methylmercury at two developmental windows: Focus on neurobehavioral and neurochemical effects in rat offspring. *Neuroscience* 141(3):1619-1629. <https://doi.org/10.1016/j.neuroscience.2006.05.017>.
- Carratu MR, Coluccia A, Modafferi AM, et al. 2008. Prenatal methylmercury exposure: Effects on stress response during active learning. *Bull Environ Contam Toxicol* 81(6):539-542. <https://doi.org/10.1007/s00128-008-9557-8>.
- Carrier G, Bouchard M, Brunet RC, et al. 2001a. A toxicokinetic model for predicting the tissue distribution and elimination of organic and inorganic mercury following exposure to methyl mercury in animals and humans. II. Application and validation of the model in humans. *Toxicol Appl Pharmacol* 171(1):50-60. <https://doi.org/10.1006/taap.2000.9113>.

8. REFERENCES

- Carrier G, Brunet RC, Caza M, et al. 2001b. A toxicokinetic model for predicting the tissue distribution and elimination of organic and inorganic mercury following exposure to methyl mercury in animals and humans. I. Development and validation of the model using experimental data in rats. *Toxicol Appl Pharmacol* 171(1):38-49. <https://doi.org/10.1006/taap.2000.9112>.
- Carrington CD, Bolger MP. 2002. An exposure assessment for methylmercury from seafood for consumers in the United States. *Risk Anal* 22(4):689-699.
- Carta P, Flore C, Alinovi R, et al. 2003. Sub-clinical neurobehavioral abnormalities associated with low level of mercury exposure through fish consumption. *Neurotoxicology* 24(4-5):617-623. [https://doi.org/10.1016/s0161-813x\(03\)00080-9](https://doi.org/10.1016/s0161-813x(03)00080-9).
- Carty AJ, Malone SF. 1979. The chemistry of mercury in biological systems. In: Nriagu JO, ed. *The biogeochemistry of mercury in the environment*. New York, NY: Elsevier/North Holland Biomedical Press, 433-480.
- Casetta I, Invernizzi M, Granieri E. 2001. Multiple sclerosis and dental amalgam: Case-control study in Ferrara, Italy. *Neuroepidemiology* 20(2):134-137. <https://doi.org/10.1159/000054773>.
- Castano A, Cutanda F, Esteban M, et al. 2015. Fish consumption patterns and hair mercury levels in children and their mothers in 17 EU countries. *Environ Res* 141:58-68. <https://doi.org/10.1016/j.envres.2014.10.029>.
- Castiello F, Olmedo P, Gil F, et al. 2020. Association of urinary metal concentrations with blood pressure and serum hormones in Spanish male adolescents. *Environ Res* 182:108958. <https://doi.org/10.1016/j.envres.2019.108958>.
- Castoldi AF, Johansson C, Onishchenko N, et al. 2008. Human developmental neurotoxicity of methylmercury: impact of variables and risk modifiers. *Regul Toxicol Pharmacol* 51(2):201-214. <https://doi.org/10.1016/j.yrtph.2008.01.016>.
- Castriotta L, Rosolen V, Biggeri A, et al. 2020. The role of mercury, selenium and the Se-Hg antagonism on cognitive neurodevelopment: A 40-month follow-up of the Italian mother-child PHIME cohort. *Int J Hyg Environ Health* 230:113604. <https://doi.org/10.1016/j.ijheh.2020.113604>.
- Cavalleri A, Gobba F. 1998. Reversible color vision loss in occupational exposure to metallic mercury. *Environ Res* 77(2):173-177. <https://doi.org/10.1006/enrs.1997.3814>.
- CDC. 2002. Urine output. Centers for Disease Control and Prevention. <https://www.cdc.gov/dengue/training/cme/ccm/page57297.html>. December 16, 2020.
- CDC. 2011. Understanding thimerosal, mercury, and vaccine safety. Centers for Disease Control and Prevention: <https://www.cdc.gov/vaccines/hcp/patient-ed/conversations/downloads/vacsafe-thimerosal-color-office.pdf>. December 14, 2020.
- CDC. 2013. What to do when mercury spills at school. Centers for Disease Control and Prevention. <https://www.atsdr.cdc.gov/dontmesswithmercury/pdfs/mercury-spill-instructions.pdf>. December 23, 2021.
- CDC. 2015. Mercury-containing objects: In schools and your home. Centers for Disease Control and Prevention. https://www.atsdr.cdc.gov/dontmesswithmercury/pdfs/Mercury-containing-objects-in-schools-and-homes_teachers.pdf. December 20, 2021.
- CDC. 2019. Fourth national report on human exposure to environmental chemicals, updated tables, January 2019. Atlanta, GA: Centers for Disease Control and Prevention. <https://www.cdc.gov/exposurereport/index.html>. December 16, 2020.
- CDC. 2020. Timeline of thimerosal in vaccines. Centers for Disease Control and Prevention. <https://www.cdc.gov/vaccinesafety/concerns/thimerosal/timeline.html>. March 15, 2021.
- CDC. 2024. Mercury. Biomonitoring data tables for environmental chemicals. Centers for Disease Control and Prevention. https://www.cdc.gov/exposurereport/data_tables.html. April 4, 2024.
- Ceccatelli S, Dare E, Moors M. 2010. Methylmercury-induced neurotoxicity and apoptosis. *Chem Biol Interact* 188(2):301-308. <https://doi.org/10.1016/j.cbi.2010.04.007>.
- Cediel Ulloa A, Gliga A, Love TM, et al. 2021. Prenatal methylmercury exposure and DNA methylation in seven-year-old children in the Seychelles Child Development Study. *Environ Int* 147:106321. <https://doi.org/10.1016/j.envint.2020.106321>.

8. REFERENCES

- Cember H, Gallagher P, Faulkner A. 1968. Distribution of mercury among blood fractions and serum proteins. *Am Ind Hyg Assoc J* 29(3):233-237. <https://doi.org/10.1080/00028896809342994>.
- Cernichiari E, Toribara TY, Liang L, et al. 1995. The biological monitoring of mercury in the Seychelles study. *Neurotoxicology* 16(4):613-628.
- Cernichiari E, Myers GJ, Ballatori N, et al. 2007. The biological monitoring of prenatal exposure to methylmercury. *Neurotoxicology* 28(5):1015-1022. <https://doi.org/10.1016/j.neuro.2007.02.009>.
- Cesario R, Hintelmann H, Mendes R, et al. 2017. Evaluation of mercury methylation and methylmercury demethylation rates in vegetated and non-vegetated saltmarsh sediments from two Portuguese estuaries. *Environ Pollut* 226:297-307. <https://doi.org/10.1016/j.envpol.2017.03.075>.
- Chalmers AT, Argue DM, Gay DA, et al. 2011. Mercury trends in fish from rivers and lakes in the United States, 1969-2005. *Environ Monit Assess* 175(1-4):175-191. <https://doi.org/10.1007/s10661-010-1504-6>.
- Chan HM, Egeland GM. 2004. Fish consumption, mercury exposure, and heart diseases. *Nutr Rev* 62(2):68-72.
- Chan PHY, Kwok KM, Chan MHM, et al. 2021. Prenatal methylmercury exposure is associated with decrease heart rate variability in children. *Environ Res* 200:111744. <https://doi.org/10.1016/j.envres.2021.111744>.
- Chang JY. 2011. Methylmercury-induced IL-6 release requires phospholipase C activities. *Neurosci Lett* 496(3):152-156. <https://doi.org/10.1016/j.neulet.2011.04.004>.
- Chang LW, Hartmann HA. 1972. Ultrastructural studies of the nervous system after mercury intoxication. I. Pathological changes in the nerve cell bodies. *Acta Neuropathol (Berl)* 20(2):122-138. <https://doi.org/10.1007/bf00691129>.
- Chang LW, Mak L, Martin AH. 1974. Effects of methylmercury on the limb regeneration of newts *Triturus-viridescens*. *Anat Rec* 178(2):509. [https://doi.org/10.1016/0013-9351\(76\)90091-8](https://doi.org/10.1016/0013-9351(76)90091-8).
- Chang YC, Yeh CY, Wang JD. 1995. Subclinical neurotoxicity of mercury vapor revealed by a multimodality evoked potential study of chloralkali workers. *Am J Ind Med* 27(2):271-279. <https://doi.org/10.1002/ajim.4700270211>.
- Chang JW, Chen HL, Su HJ, et al. 2011. Simultaneous exposure of non-diabetics to high levels of dioxins and mercury increases their risk of insulin resistance. *J Hazard Mater* 185(2-3):749-755. <https://doi.org/10.1016/j.jhazmat.2010.09.084>.
- Chang JY, Park JS, Shin S, et al. 2015. Mercury exposure in healthy Korean weaning-age infants: Association with growth, feeding and fish intake. *Int J Environ Res Public Health* 12(11):14669-14689. <https://doi.org/10.3390/ijerph121114669>.
- Chapman LJ, Sauter SL, Henning RA, et al. 1990. Differences in frequency of finger tremor in otherwise asymptomatic mercury workers. *Br J Ind Med* 47(12):838-843. <https://doi.org/10.1136/oem.47.12.838>.
- Charbonneau SM, Munro IC, Nera EA, et al. 1976. Chronic toxicity of methylmercury in the adult cat. Interim report. *Toxicology* 5(3):337-349. [https://doi.org/10.1016/0300-483x\(76\)90052-4](https://doi.org/10.1016/0300-483x(76)90052-4).
- Charette T, Bueno Dalto D, Rosabal M, et al. 2021. Assessment of in vitro bioaccessibility and in vivo oral bioavailability as complementary tools to better understand the effect of cooking on methylmercury, arsenic, and selenium in tuna. *Toxics* 9(2):27. <https://doi.org/10.3390/toxics9020027>.
- Charleston JS, Bolender RP, Mottet NK, et al. 1994. Increases in the number of reactive glia in the visual cortex of *Macaca fascicularis* following subclinical long-term methyl mercury exposure. *Toxicol Appl Pharmacol* 129(2):196-206. <https://doi.org/10.1006/taap.1994.1244>.
- Charleston JS, Body RL, Mottet NK, et al. 1995. Autometallographic determination of inorganic mercury distribution in the cortex of the calcarine sulcus of the monkey *Macaca fascicularis* following long-term subclinical exposure to methylmercury and mercuric chloride. *Toxicol Appl Pharmacol* 132(2):325-333. <https://doi.org/10.1006/taap.1995.1114>.

8. REFERENCES

- Charleston JS, Body RL, Bolender RP, et al. 1996. Changes in the number of astrocytes and microglia in the thalamus of the monkey *Macaca fascicularis* following long-term subclinical methylmercury exposure. *Neurotoxicology* 17(1):127-138.
- Cheatham C. 2008. Omega-3 fatty acids and the development of cognitive abilities: A review of DHA supplementation studies. *CAB Rev Perspect Agric Vet Sci Nutr Nat Resour* 3(001):1-15. <https://doi.org/10.1079/pavsnr20083001>.
- Chehimi L, Roy V, Jeljeli M, et al. 2012. Chronic exposure to mercuric chloride during gestation affects sensorimotor development and later behaviour in rats. *Behav Brain Res* 234(1):43-50. <https://doi.org/10.1016/j.bbr.2012.06.005>.
- Chemelo VS, Nascimento PC, Bittencourt LO, et al. 2022. In utero and lactational exposure to methylmercury elicits physical-chemical and morphological damages in the alveolar bone of offspring rats: The first toxicological findings. *Chemosphere* 308(Pt 3):136453. <https://doi.org/10.1016/j.chemosphere.2022.136453>.
- Chen L, Li Y. 2019. A review on the distribution and cycling of mercury in the pacific ocean. *Bull Environ Contam Toxicol* 102(5):665-671. <https://doi.org/10.1007/s00128-019-02560-x>.
- Chen CY, Dionne M, Mayes BM, et al. 2009. Mercury bioavailability and bioaccumulation in estuarine food webs in the Gulf of Maine. *Environ Sci Technol* 43(6):1804-1810.
- Chen KL, Liu SH, Su CC, et al. 2012. Mercuric compounds induce pancreatic islets dysfunction and apoptosis in vivo. *Int J Mol Sci* 13(10):12349-12366. <https://doi.org/10.3390/ijms131012349>.
- Chen A, Kim SS, Chung E, et al. 2013. Thyroid hormones in relation to lead, mercury, and cadmium exposure in the National Health and Nutrition Examination Survey, 2007-2008. *Environ Health Perspect* 121(2):181-186. <https://doi.org/10.1289/ehp.1205239>.
- Chen C, Xun P, McClure LA, et al. 2018. Serum mercury concentration and the risk of ischemic stroke: The REasons for Geographic and Racial Differences in Stroke Trace Element Study. *Environ Int* 117:125-131. <https://doi.org/10.1016/j.envint.2018.05.001>.
- Chen N, Lin M, Liu N, et al. 2019a. Methylmercury-induced testis damage is associated with activation of oxidative stress and germ cell autophagy. *J Inorg Biochem* 190:67-74. <https://doi.org/10.1016/j.jinorgbio.2018.10.007>.
- Chen R, Xu Y, Xu C, et al. 2019b. Associations between mercury exposure and the risk of nonalcoholic fatty liver disease (NAFLD) in US adolescents. *Environ Sci Pollut Res Int* 26(30):31384-31391. <https://doi.org/10.1007/s11356-019-06224-5>.
- Chen KH, Yu HC, Chang YC. 2021. Analysis of dental amalgam fillings on primary Sjögren's syndrome: A population-based case-control study in Taiwan. *Medicine (Baltimore)* 100(47):e28031. <https://doi.org/10.1097/md.00000000000028031>.
- Chen C, Zhang S, Yang T, et al. 2023a. Associations between environmental heavy metals exposure and preserved ratio impaired spirometry in the U.S. adults. *Environ Sci Pollut Res Int* 30(49):108274-108287. <https://doi.org/10.1007/s11356-023-29688-y>.
- Chen Y, Zhao A, Li R, et al. 2023b. Independent and combined associations of multiple-heavy-metal exposure with lung function: a population-based study in US children. *Environ Geochem Health* 45(7):5213-5230. <https://doi.org/10.1007/s10653-023-01565-0>.
- Chen T, Li Y, Liu J, et al. 2023c. The burden of mild intellectual disability attributed to prenatal exposure to methylmercury in China, 2017. *Ecotoxicol Environ Saf* 254:114748. <https://doi.org/10.1016/j.ecoenv.2023.114748>.
- Cheng J, Fujimura M, Bo D. 2015. Assessing pre/post-weaning neurobehavioral development for perinatal exposure to low doses of methylmercury. *J Environ Sci (China)* 38:36-41. <https://doi.org/10.1016/j.jes.2015.05.027>.
- Cherian MG, Clarkson TW. 1976. Biochemical changes in rat kidney on exposure to elemental mercury vapor: Effect on biosynthesis of metallothionein. *Chem Biol Interact* 12(2):109-120. [https://doi.org/10.1016/0009-2797\(76\)90093-4](https://doi.org/10.1016/0009-2797(76)90093-4).

8. REFERENCES

- Cherian MG, Hursh JB, Clarkson TW, et al. 1978. Radioactive mercury distribution in biological fluids and excretion in human subjects after inhalation of mercury vapor. *Arch Environ Health* 33(3):109-114. <https://doi.org/10.1080/00039896.1978.10667318>.
- Chernyak YI, Merinova AP. 2017. HSP70 (HSPA1) polymorphisms in former workers with chronic mercury vapor exposure. *Int J Occup Med Environ Health* 30(1):77-85. <https://doi.org/10.13075/ijom.1896.00732>.
- Cheuk DK, Wong V. 2006. Attention-deficit hyperactivity disorder and blood mercury level: a case-control study in Chinese children. *Neuropediatrics* 37(4):234-240. <https://doi.org/10.1055/s-2006-924577>.
- Chevrier C, Sullivan K, White RF, et al. 2009. Qualitative assessment of visuospatial errors in mercury-exposed Amazonian children. *Neurotoxicology* 30(1):37-46. <https://doi.org/10.1016/j.neuro.2008.09.012>.
- Cho KY. 2021. Association of blood mercury levels with the risks of overweight and high waist-to-height ratio in children and adolescents: Data from the Korean National Health and Nutrition Examination Survey. *Children (Basel)* 8(12):1087. <https://doi.org/10.3390/children8121087>.
- Cho HW, Kim SH, Park MJ. 2020. An association of blood mercury levels and hypercholesterolemia among Korean adolescents. *Sci Total Environ* 709:135965. <https://doi.org/10.1016/j.scitotenv.2019.135965>.
- Cho GJ, Park HT, Shin JH, et al. 2012. The relationship between blood mercury level and osteoporosis in postmenopausal women. *Menopause* 19(5):576-581. <https://doi.org/10.1097/gme.0b013e3182377294>.
- Choi YH, Park SK. 2017. Environmental exposures to lead, mercury, and cadmium and hearing loss in adults and adolescents: KNHANES 2010-2012. *Environ Health Perspect* 125(6):1-8. <https://doi.org/10.1289/ehp565>.
- Choi AL, Cordier S, Weihe P, et al. 2008a. Negative confounding in the evaluation of toxicity: the case of methylmercury in fish and seafood. *Crit Rev Toxicol* 38(10):877-893. <https://doi.org/10.1080/10408440802273164>.
- Choi AL, Budtz-Jorgensen E, Jorgensen PJ, et al. 2008b. Selenium as a potential protective factor against mercury developmental neurotoxicity. *Environ Res* 107(1):45-52. <https://doi.org/10.1016/j.envres.2007.07.006>.
- Choi AL, Weihe P, Budtz-Jorgensen E, et al. 2009. Methylmercury exposure and adverse cardiovascular effects in Faroese whaling men. *Environ Health Perspect* 117(3):367-372. <https://doi.org/10.1289/ehp.11608>.
- Choi B, Yeum KJ, Park SJ, et al. 2015. Elevated serum ferritin and mercury concentrations are associated with hypertension; analysis of the fourth and fifth Korea national health and nutrition examination survey (KNHANES IV-2, 3, 2008-2009 and V-1, 2010). *Environ Toxicol* 30(1):101-108. <https://doi.org/10.1002/tox.21899>.
- Choi J, Bae S, Lim H, et al. 2017. Mercury exposure in association with decrease of liver function in adults: A longitudinal study. *J Prev Med Public Health* 50(6):377-385. <https://doi.org/10.3961/jpmph.17.099>.
- Choi S, Lee A, Choi G, et al. 2022. Free cortisol mediates associations of maternal urinary heavy metals with neonatal anthropometric measures: A cross-sectional study. *Toxics* 10(4):167. <https://doi.org/10.3390/toxics10040167>.
- Chowdhury R, Ramond A, O'Keeffe LM, et al. 2018. Environmental toxic metal contaminants and risk of cardiovascular disease: Systematic review and meta-analysis. *BMJ* 362:k3310. <https://doi.org/10.1136/bmj.k3310>.
- Choy CM, Yeung QS, Britton-Jones CM, et al. 2002. Relationship between semen parameters and mercury concentrations in blood and in seminal fluid from subfertile males in Hong Kong. *Fertil Steril* 78(2):426-428. [https://doi.org/10.1016/s0015-0282\(02\)03232-6](https://doi.org/10.1016/s0015-0282(02)03232-6).
- Christensen H, Krogh M, Nielsen M. 1937. Acute mercury poisoning in a respiration chamber. *Nature* 139(3519):626-627. <https://doi.org/10.1038/139626b0>.

8. REFERENCES

- Christie NT, Cantoni O, Evans RM, et al. 1984. Use of mammalian DNA repair-deficient mutants to assess the effects of toxic metal compounds on DNA. *Biochem Pharmacol* 33(10):1661-1670. [https://doi.org/10.1016/0006-2952\(84\)90289-2](https://doi.org/10.1016/0006-2952(84)90289-2).
- Christie NT, Cantoni O, Sugiyama M, et al. 1986. Differences in the effects of Hg(II) on DNA repair induced in Chinese hamster ovary cells by ultraviolet or X-rays. *Mol Pharmacol* 29(2):173-178.
- Chung SH, Myong JP. 2016. Are higher blood mercury levels associated with dry eye symptoms in adult Koreans? A population-based cross-sectional study. *BMJ Open* 6(4):e010985. <https://doi.org/10.1136/bmjopen-2015-010985>.
- Chung SM, Moon JS, Yoon JS, et al. 2020. The sex-specific effects of blood lead, mercury, and cadmium levels on hepatic steatosis and fibrosis: Korean nationwide cross-sectional study. *J Trace Elem Med Biol* 62:126601. <https://doi.org/10.1016/j.jtemb.2020.126601>.
- Chung JW, Acharya D, Singh JK, et al. 2023. Association of blood mercury level with liver enzymes in Korean adults: An analysis of 2015-2017 Korean National Environmental Health Survey. *Int J Environ Res Public Health* 20(4):3290. <https://doi.org/10.3390/ijerph20043290>.
- Chuu JJ, Hsu CJ, Lin-Shiau SY. 2001a. Abnormal auditory brainstem responses for mice treated with mercurial compounds: Involvement of excessive nitric oxide. *Toxicology* 162(1):11-22. [https://doi.org/10.1016/s0300-483x\(01\)00348-1](https://doi.org/10.1016/s0300-483x(01)00348-1).
- Chuu JJ, Young YH, Liu SH, et al. 2001b. Neurotoxicity of mercury sulfide in the vestibular ocular reflex system of guinea pigs. *Naunyn Schmiedebergs Arch Pharmacol* 364(3):249-258. <https://doi.org/10.1007/s002100000279>.
- Chuu JJ, Liu SH, Lin-Shiau SY. 2007. Differential neurotoxic effects of methylmercury and mercuric sulfide in rats. *Toxicol Lett* 169(2):109-120. <https://doi.org/10.1016/j.toxlet.2006.12.006>.
- Clarkson TW. 1971. Epidemiological and experimental aspects of lead and mercury contamination of food. *Food Cosmet Toxicol* 9(2):229-243. [https://doi.org/10.1016/0015-6264\(71\)90308-7](https://doi.org/10.1016/0015-6264(71)90308-7).
- Clarkson TW. 1989. Mercury. *J Am Coll Toxicol* 8(7):1291-1295.
- Clarkson TW. 1993. Molecular and ionic mimicry of toxic metals. *Annu Rev Pharmacol Toxicol* 32:545-571.
- Clarkson TW. 2006. The three modern faces of mercury. *Birth Defects Res A Clin Mol Teratol* 76(5):359.
- Clarkson T, Rothstein A. 1964. The excretion of volatile mercury by rats injected with mercuric salts. *Health Phys* 10:1115-1121. <https://doi.org/10.1097/00004032-196412000-00032>.
- Clarkson TW, Shapiro RE. 1971. The absorption of mercury from food, its significance and new methods of removing mercury from the body. In: *Proceedings of special symposium on mercury in man's environment*. Ottawa, Canada: The Royal Society of Canada, 124-130.
- Clarkson TW, Magos L. 2006. The toxicology of mercury and its chemical compounds. *Crit Rev Toxicol* 36(8):609-662. <https://doi.org/10.1080/10408440600845619>.
- Clarkson TW, Magos L, Greenwood MR. 1972. The transport of elemental mercury into fetal tissues. *Neonatology* 21(3-4):239-244. <https://doi.org/10.1159/000240512>.
- Clarkson TW, Amin-Zaki L, Al-Tikriti SK. 1976. An outbreak of methylmercury poisoning due to consumption of contaminated grain. *Fed Proc* 35(12):2395-2399.
- Clarkson TW, Friberg L, Hursh JB, et al. 1988. The prediction of intake of mercury vapor from amalgams. In: *Biological monitoring of toxic metals*. New York, NY: Plenum Press, 247-264.
- Clarkson TW, Magos L, Myers GJ. 2003. The toxicology of mercury--current exposures and clinical manifestations. *N Engl J Med* 349(18):1731-1737. <https://doi.org/10.1056/NEJMra022471>.
- Clarkson TW, Vyas JB, Ballatori N. 2007. Mechanisms of mercury disposition in the body. *Am J Ind Med* 50(10):757-764. <https://doi.org/10.1002/ajim.20476>.
- Clewell HJ. 1995. The application of physiologically based pharmacokinetic modeling in human health risk assessment of hazardous substances. *Toxicol Lett* 79(1-3):207-217. [https://doi.org/10.1016/0378-4274\(95\)03372-r](https://doi.org/10.1016/0378-4274(95)03372-r).
- Clewell HJ, Gearhart JM, Gentry PR, et al. 1999. Evaluation of the uncertainty in an oral reference dose for methylmercury due to interindividual variability in pharmacokinetics. *Risk Anal* 19(4):547-558.

8. REFERENCES

- Cocking D, King ML, Ritchie L, et al. 1994. Earthworm bioaccumulation of mercury from contaminated flood plain soils. In: Watras CJ, Huckabee JW, eds. Mercury pollution integration and synthesis. Boca Raton, FL: Lewis Publishers, 381-394.
- Cohen JT, Bellinger DC, Shaywitz BA. 2005. A quantitative analysis of prenatal methyl mercury exposure and cognitive development. *Am J Prev Med* 29(4):353-365. <https://doi.org/10.1016/j.amepre.2005.06.007>.
- Cohen MD, Draxler RR, Artz RS, et al. 2016. Modeling the global atmospheric transport and deposition of mercury to the Great Lakes. *Elementa* 4:000118. <https://doi.org/10.12952/journal.elementa.000118>.
- Cole DC, Wainman B, Sanin LH, et al. 2006. Environmental contaminant levels and fecundability among non-smoking couples. *Reprod Toxicol* 22(1):13-19. <https://doi.org/10.1016/j.reprotox.2005.12.001>.
- Colon-Rodriguez A, Hannon HE, Atchison WD. 2017. Effects of methylmercury on spinal cord afferents and efferents. A review. *Neurotoxicology* 60:308-320. <https://doi.org/10.1016/j.neuro.2016.12.007>.
- Coluccia A, Borracci P, Giustino A, et al. 2007. Effects of low dose methylmercury administration during the postnatal brain growth spurt in rats. *Neurotoxicol Teratol* 29(2):282-287. <https://doi.org/10.1016/j.ntt.2006.10.005>.
- Copan L, Fowles J, Barreau T, et al. 2015. Mercury toxicity and contamination of households from the use of skin creams adulterated with mercurous chloride (calomel). *Int J Environ Res Public Health* 12(9):10943-10954. <https://doi.org/10.3390/ijerph120910943>.
- Cope WG, Wiener JG, Rada RG. 1990. Mercury accumulation in yellow perch in Wisconsin seepage lakes: Relation to lake characteristics. *Environ Toxicol Chem* 9(7):931-940. <https://doi.org/10.1002/etc.5620090711>.
- Cordier S, Deplan F, Mandereau L, et al. 1991. Paternal exposure to mercury and spontaneous abortions. *Br J Ind Med* 48(6):375-381. <https://doi.org/10.1136/oem.48.6.375>.
- Cordier S, Garel M, Mandereau L, et al. 2002. Neurodevelopmental investigations among methylmercury-exposed children in French Guiana. *Environ Res* 89(1):1-11. <https://doi.org/10.1006/enrs.2002.4349>.
- Cordier S, Anassour-Laouan-Sidi E, Lemire M, et al. 2020. Association between exposure to persistent organic pollutants and mercury, and glucose metabolism in two Canadian Indigenous populations. *Environ Res* 184:109345. <https://doi.org/10.1016/j.envres.2020.109345>.
- Corrêa MG, Bittencourt LO, Nascimento PC, et al. 2020. Spinal cord neurodegeneration after inorganic mercury long-term exposure in adult rats: Ultrastructural, proteomic and biochemical damages associated with reduced neuronal density. *Ecotoxicol Environ Saf* 191:110159. <https://doi.org/10.1016/j.ecoenv.2019.110159>.
- Cortés-Gutiérrez EI, Cerda-Flores RM, Gonzalez-Ramirez D, et al. 2004. Evaluation of the mutagenic and cytotoxic effects of mercurous chloride by the micronuclei technique in golden Syrian hamsters. *Mutagenesis* 19(3):203-205.
- Cortes-Maramba N, Reyes JP, Francisco-Rivera AT, et al. 2006. Health and environmental assessment of mercury exposure in a gold mining community in Western Mindanao, Philippines. *J Environ Manage* 81(2):126-134. <https://doi.org/10.1016/j.jenvman.2006.01.019>.
- Cossa D, Gobeil C, Courau P. 1988. Dissolved mercury behaviour in the Saint Lawrence estuary. *Estuarine Coastal Shelf Sci* 26(2):227-230. [https://doi.org/10.1016/0272-7714\(88\)90052-2](https://doi.org/10.1016/0272-7714(88)90052-2).
- Costa M, Christie NT, Cantoni O, et al. 1991. DNA damage by mercury compounds: An overview. In: Suzuki T, Imura N, Clarkson TW, eds. *Advances in mercury toxicology*. New York, NY: Plenum Press, 255-273.
- Counter SA. 2003. Neurophysiological anomalies in brainstem responses of mercury-exposed children of Andean gold miners. *J Occup Environ Med* 45(1):87-95.
- Counter SA, Buchanan LH, Laurell G, et al. 1998. Blood mercury and auditory neuro-sensory responses in children and adults in the Nambija gold mining area of Ecuador. *Neurotoxicology* 19(2):185-196.

8. REFERENCES

- Counter SA, Buchanan LH, Ortega F. 2006. Neurocognitive screening of mercury-exposed children of Andean gold miners. *Int J Occup Environ Health* 12(3):209-214. <https://doi.org/10.1179/oeht.2006.12.3.209>.
- Counter SA, Buchanan LH, Ortega F. 2012. Acoustic stapedius muscle reflex in mercury-exposed Andean children and adults. *Acta Oto-Laryngologica* 132(1):51-63. <https://doi.org/10.3109/00016489.2011.617778>.
- Counter SA, Buchanan LH, Ortega F, et al. 2002. Elevated blood mercury and neuro-otological observations in children of the Ecuadorian gold mines. *J Toxicol Environ Health A* 65(2):149-163. <https://doi.org/10.1080/152873902753396785>.
- Cox C, Clarkson TW, Marsh DO, et al. 1989. Dose-response analysis of infants prenatally exposed to methyl mercury: An application of a single compartment model to single-strand hair analysis. *Environ Res* 49(2):318-332.
- Cragle DL, Hollis DR, Qualters JR, et al. 1984. A mortality study of men exposed to elemental mercury. *J Occup Med* 26(11):817-821. <https://doi.org/10.1097/00043764-198411000-00011>.
- Creed JH, Peeri NC, Anic GM, et al. 2019. Methylmercury exposure, genetic variation in metabolic enzymes, and the risk of glioma. *Sci Rep* 9(1):10861. <https://doi.org/10.1038/s41598-019-47284-4>.
- Crespo-López ME, Lima de Sa A, Herculano AM, et al. 2007. Methylmercury genotoxicity: a novel effect in human cell lines of the central nervous system. *Environ Int* 33(2):141-146. <https://doi.org/10.1016/j.envint.2006.08.005>.
- Crespo-Lopez ME, Costa-Malaquias A, Oliveira EH, et al. 2016. Is low non-lethal concentration of methylmercury really safe? A report on genotoxicity with delayed cell proliferation. *PLoS ONE* 11(9):e0162822. <https://doi.org/10.1371/journal.pone.0162822>.
- CRITFC. 1994. A fish consumption survey of the Umatilla, Nez Perce, Yakima and Warm Springs tribes of the Columbia River Basin. Columbia River Inter-Tribal Fish Commission. 1-105. Technical Report 94-3.
- Crowe W, Doherty L, Watson G, et al. 2015. Mercury in hair is inversely related to disease associated damage in systemic lupus erythematosus. *Int J Environ Res Public Health* 13(1):0075. <https://doi.org/10.3390/ijerph13010075>.
- Crump K, Viren J, Silvers A, et al. 1995. Reanalysis of dose-response data from the Iraqi methylmercury poisoning episode. *Risk Anal* 15(4):523-532.
- Crump KS, Kjellstrom T, Shipp AM, et al. 1998. Influence of prenatal mercury exposure upon scholastic and psychological test performance: benchmark analysis of a New Zealand cohort. *Risk Anal* 18(6):701-713.
- Crump KS, Van Landingham C, Shamlaye C, et al. 2000. Benchmark concentrations for methylmercury obtained from the Seychelles Child Development Study. *Environ Health Perspect* 108(3):257-263.
- Culbreth M, Aschner M. 2016. Dysregulation of glutamate cycling mediates methylmercury-induced neurotoxicity. *Adv Neurobiol* 13:295-305. https://doi.org/10.1007/978-3-319-45096-4_11.
- Czuba M, Mortimer DC. 1980. Stability of methylmercury and inorganic mercury in aquatic plants (*Elodea densa*). *Can J Bot* 58(3):316-320.
- da Cunha Martins A, Carneiro MFH, Grotto D, et al. 2018. Arsenic, cadmium, and mercury-induced hypertension: mechanisms and epidemiological findings. *J Toxicol Environ Health B Crit Rev* 21(2):61-82. <https://doi.org/10.1080/10937404.2018.1432025>.
- da Silva DCB, Bittencourt LO, Baia-da-Silva DC, et al. 2022. Methylmercury causes neurodegeneration and downregulation of myelin basic protein in the spinal cord of offspring rats after maternal exposure. *Int J Mol Sci* 23(7):3777. <https://doi.org/10.3390/ijms23073777>.
- Dack K, Wootton RE, Taylor CM, et al. 2023. Prenatal mercury exposure and infant weight trajectories in a UK observational birth cohort. *Toxics* 11(1):10. <https://doi.org/10.3390/toxics11010010>.
- Dakeishi M, Nakai K, Sakamoto M, et al. 2005. Effects of hair treatment on hair mercury-The best biomarker of methylmercury exposure? *Environ Health Prev Med* 10(4):208-212. <https://doi.org/10.1007/bf02897712>.

8. REFERENCES

- Dallaire R, Dewailly E, Ayotte P, et al. 2013. Exposure to organochlorines and mercury through fish and marine mammal consumption: associations with growth and duration of gestation among Inuit newborns. *Environ Int* 54:85-91. <https://doi.org/10.1016/j.envint.2013.01.013>.
- Daneshmand R, Kurl S, Tuomainen TP, et al. 2016. Associations of serum n-3 and n-6 PUFA and hair mercury with the risk of incident stroke in men: the Kuopio Ischaemic Heart Disease Risk Factor Study (KIHD). *Br J Nutr* 115(10):1851-1859. <https://doi.org/10.1017/S0007114516000982>.
- Daniel JW, Gage JC, Lefevre PA. 1972. The metabolism of phenylmercury by the rat. *Biochem J* 129(4):961-967. <https://doi.org/10.1042/bj1290961>.
- Daniels JL, Longnecker MP, Rowland AS, et al. 2004. Fish intake during pregnancy and early cognitive development of offspring. *Epidemiology* 15(4):394-402. <https://doi.org/10.1097/01.ede.0000129514.46451.ce>.
- Danielsson BR, Fredriksson A, Dahlgren L, et al. 1993. Behavioural effects of prenatal metallic mercury inhalation exposure in rats. *Neurotoxicol Teratol* 15(6):391-396. [https://doi.org/10.1016/0892-0362\(93\)90056-t](https://doi.org/10.1016/0892-0362(93)90056-t).
- Dansch G, Moller-Madsen B. 1985. Silver amplification of mercury sulfide and selenide: a histochemical method for light and electron microscopic localization of mercury in tissue. *J Histochem Cytochem* 33(3):219-228. <https://doi.org/10.1177/33.3.2579122>.
- Das RM, Ahmed MK, Oulton MR, et al. 1997. Methylmercury-induced alterations in lung and pulmonary surfactant properties of adult mice. *Chem Phys Lipids* 89(2):107-117. [https://doi.org/10.1016/s0009-3084\(97\)00072-8](https://doi.org/10.1016/s0009-3084(97)00072-8).
- Dastoor A, Wilson SJ, Travnikov O, et al. 2022. Arctic atmospheric mercury: Sources and changes. *Sci Total Environ* 839:156213. <https://doi.org/10.1016/j.scitotenv.2022.156213>.
- Davidson PW, Meyers GJ, Cox C, et al. 1995. Longitudinal neurodevelopmental study of Seychellois children following in utero exposure to methylmercury from maternal fish ingestion: Outcomes at 19 and 29 months. *Neurotoxicology* 16(4):677-688.
- Davidson PW, Myers GJ, Cox C, et al. 1998. Effects of prenatal and postnatal methylmercury exposure from fish consumption on neurodevelopment: Outcomes at 66 months of age in the Seychelles Child Development Study. *JAMA* 280(8):701-707. <https://doi.org/10.1001/jama.280.8.701>.
- Davidson PW, Myer GJ, Shamlaye C, et al. 1999. Association between prenatal exposure to methylmercury and developmental outcomes in Seychellois children: effect modification by social and environmental factors. *Neurotoxicology* 20(5):833-841.
- Davidson PW, Myers GJ, Shamlaye C, et al. 2004. Prenatal exposure to methylmercury and child development: influence of social factors. *Neurotoxicol Teratol* 26(4):553-559. <https://doi.org/10.1016/j.ntt.2004.03.007>.
- Davidson PW, Myers GJ, Cox C, et al. 2006a. Methylmercury and neurodevelopment: Longitudinal analysis of the Seychelles child development cohort. *Neurotoxicol Teratol* 28(5):529-535. <https://doi.org/10.1016/j.ntt.2006.06.002>.
- Davidson PW, Myers GJ, Weiss B, et al. 2006b. Prenatal methyl mercury exposure from fish consumption and child development: a review of evidence and perspectives from the Seychelles Child Development Study. *Neurotoxicology* 27(6):1106-1109. <https://doi.org/10.1016/j.neuro.2006.03.024>.
- Davidson PW, Jean Sloane R, Myers GJ, et al. 2008a. Association between prenatal exposure to methylmercury and visuospatial ability at 10.7 years in the Seychelles Child Development Study. *Neurotoxicology* 29(3):453-459. <https://doi.org/10.1016/j.neuro.2008.02.009>.
- Davidson PW, Strain JJ, Myers GJ, et al. 2008b. Neurodevelopmental effects of maternal nutritional status and exposure to methylmercury from eating fish during pregnancy. *Neurotoxicology* 29(5):767-775. <https://doi.org/10.1016/j.neuro.2008.06.001>.
- Davidson PW, Leste A, Benstrong E, et al. 2010. Fish consumption, mercury exposure, and their associations with scholastic achievement in the Seychelles Child Development Study. *Neurotoxicology* 31(5):439-447. <https://doi.org/10.1016/j.neuro.2010.05.010>.

8. REFERENCES

- Davidson PW, Cory-Slechta DA, Thurston SW, et al. 2011. Fish consumption and prenatal methylmercury exposure: cognitive and behavioral outcomes in the main cohort at 17 years from the Seychelles child development study. *Neurotoxicology* 32(6):711-717. <https://doi.org/10.1016/j.neuro.2011.08.003>.
- Davis LE. 2000. Unregulated potions still cause mercury poisoning. *West J Med* 173(1):19.
- Davis BJ, Price HC, O'Connor RW, et al. 2001. Mercury vapor and female reproductive toxicity. *Toxicol Sci* 59(2):291-296. <https://doi.org/10.1093/toxsci/59.2.291>.
- Davis MA, Gilbert-Diamond D, Karagas MR, et al. 2014. A dietary-wide association study (DWAS) of environmental metal exposure in US children and adults. *PLoS ONE* 9(9):e104768. <https://doi.org/10.1371/journal.pone.0104768>.
- 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(4):584-590. <https://doi.org/10.1289/ehp.8202>.
- de Ceaurriz J, Payan JP, Morel G, et al. 1994. Role of extracellular glutathione and gamma-glutamyltranspeptidase in the disposition and kidney toxicity of inorganic mercury in rats. *J Appl Toxicol* 14(3):201-206.
- de Oliveira Lopes G, Aragão WAB, Bittencourt LO, et al. 2021. Imaging microstructural damage and alveolar bone loss in rats systemically exposed to methylmercury: first experimental evidence. *Biol Trace Elem Res* 199(10):3707-3717. <https://doi.org/10.1007/s12011-020-02492-2>.
- de Winter-Sorkina R, Bakker MI, van Donkersgoed G, et al. 2003. Dietary intake of heavy metals (cadmium, lead and mercury) by the Dutch population. Wageningen, Netherlands: Institute of Food Safety. 1-49. RIVM report 320103001. RIKILT-report 2003.016.
- Dean JG, Bosqui FL, Lanouette KH. 1972. Removing heavy metals from waste water. *Environ Sci Technol* 6(6):518-522. <https://doi.org/10.1021/es60065a006>.
- Debes F, Budtz-Jorgensen E, Weihe P, et al. 2006. Impact of prenatal methylmercury exposure on neurobehavioral function at age 14 years. *Neurotoxicol Teratol* 28(5):536-547. <https://doi.org/10.1016/j.ntt.2006.02.005>.
- Debes F, Weihe P, Grandjean P. 2016. Cognitive deficits at age 22 years associated with prenatal exposure to methylmercury. *Cortex* 74:358-369. <https://doi.org/10.1016/j.cortex.2015.05.017>.
- Decharat S, Phethuayluk P, Maneelok S, et al. 2014. Determination of mercury exposure among dental health workers in Nakhon Si Thammarat Province, Thailand. *J Toxicol* 2014:1-8. <https://doi.org/10.1155/2014/401012>.
- Dencker L, Danielsson B, Khayat A, et al. 1983. Deposition of metals in the embryo and fetus. In: Clarkson TW, Nordberg GG, Sager PR, eds. *Reproductive and developmental toxicity of metals*. New York, NY: Plenum Press, 607-631.
- Denkenberger JS, Fakhraei H, Branfireun B, et al. 2020. Watershed influences on mercury in tributaries to Lake Ontario. *Ecotoxicology* 29(10):1614-1626. <https://doi.org/10.1007/s10646-019-02157-4>.
- DeRouen TA, Martin MD, Leroux BG, et al. 2006. Neurobehavioral effects of dental amalgam in children: A randomized clinical trial. *JAMA* 295(15):1784-1792. <https://doi.org/10.1001/jama.295.15.1784>.
- Desai G, Niu Z, Luo W, et al. 2021. Low-level exposure to lead, mercury, arsenic, and cadmium, and blood pressure among 8-17-year-old participants of the 2009-2016 National Health and Nutrition Examination Survey. *Environ Res* 197:111086. <https://doi.org/10.1016/j.envres.2021.111086>.
- Desjardins RM, Bradbury WC, Seyfried PL. 1988. Effects of metals from mine tailings on the microflora of a marsh treatment system. In: Adams WJ, Chapman GA, Landis WG, eds. *Aquatic toxicology and hazard assessment*. Vol. 10th. Philadelphia, PA: American Society for Testing and Materials, 491-502.
- Despres C, Beuter A, Richer F, et al. 2005. Neuromotor functions in Inuit preschool children exposed to Pb, PCBs, and Hg. *Neurotoxicol Teratol* 27(2):245-257. <https://doi.org/10.1016/j.ntt.2004.12.001>.
- DeVito SC, Brooks WE. 2013. Mercury. In: Kirk-Othmer encyclopedia of chemical technology. Hoboken, NJ: Wiley, 1-23.

8. REFERENCES

- Diamond GL. 1988. Biological monitoring of urine for exposure to toxic metals. In: Clarkson TW, Friberg L, Nordberg GF, et al., eds. *Biological monitoring of toxic metals*. New York, NY: Plenum Press, 515-529.
- Dick AL, Sheppard DS, Patterson JE. 1990. Mercury content of Antarctic surface snow: Initial results. *Atmos Environ* 24A(4):973-978. [https://doi.org/10.1016/0960-1686\(90\)90299-3](https://doi.org/10.1016/0960-1686(90)90299-3).
- Dickerson EH, Sathyapalan T, Knight R, et al. 2011. Endocrine disruptor & nutritional effects of heavy metals in ovarian hyperstimulation. *J Assist Reprod Genet* 28(12):1223-1228. <https://doi.org/10.1007/s10815-011-9652-3>.
- Dieter MP, Luster MI, Boorman GA, et al. 1983. Immunological and biochemical responses in mice treated with mercuric chloride. *Toxicol Appl Pharmacol* 68(2):218-228. [https://doi.org/10.1016/0041-008x\(83\)90006-6](https://doi.org/10.1016/0041-008x(83)90006-6).
- Dieter MP, Boorman GA, Jameson CW, et al. 1992. Development of renal toxicity in F344 rats gavaged with mercuric chloride for 2 weeks, or 2, 4, 6, 15, and 24 months. *J Toxicol Environ Health* 36(4):319-340. <https://doi.org/10.1080/15287399209531642>.
- Dieter MP, Goehl TJ, Jameson CW, et al. 1993. Comparison of the toxicity of citral in F344 rats and B6C3F1 mice when administered by microencapsulation in feed or by corn-oil gavage. *Food Chem Toxicol* 31(7):463-474. [https://doi.org/10.1016/0278-6915\(93\)90105-8](https://doi.org/10.1016/0278-6915(93)90105-8).
- Dietrich MO, Mantese CE, Anjos GD, et al. 2005. Motor impairment induced by oral exposure to methylmercury in adult mice. *Environ Toxicol Pharmacol* 19(1):169-175. <https://doi.org/10.1016/j.etap.2004.07.004>.
- Ding G, Cui C, Chen L, et al. 2013. Prenatal low-level mercury exposure and neonatal anthropometry in rural northern China. *Chemosphere* 92(9):1085-1089. <https://doi.org/10.1016/j.chemosphere.2013.01.045>.
- Diringer SE, Feingold BJ, Ortiz EJ, et al. 2015. River transport of mercury from artisanal and small-scale gold mining and risks for dietary mercury exposure in Madre de Dios, Peru. *Environ Sci Process Impacts* 17(2):478-487. <https://doi.org/10.1039/c4em00567h>.
- Discalzi G, Fabbro D, Meliga F, et al. 1993. Effects of occupational exposure to mercury and lead on brainstem auditory evoked potentials. *Int J Psychophysiol* 14(1):21-25. [https://doi.org/10.1016/0167-8760\(93\)90080-9](https://doi.org/10.1016/0167-8760(93)90080-9).
- Dock L, Rissanen RL, Vahter M. 1994. Demethylation and placental transfer of methyl mercury in the pregnant hamster. *Toxicology* 94(1):131-142. [https://doi.org/10.1016/0300-483X\(94\)90033-7](https://doi.org/10.1016/0300-483X(94)90033-7).
- DOE. 2018a. Table 3: Protective action criteria (PAC) rev. 29a based on applicable 60-minute AEGs, ERPGs, or TEELs. The chemicals are listed by CASRN. June 2018. U.S. Department of Energy. https://edms3.energy.gov/pac/docs/Revision_29A_Table3.pdf. July 6, 2022.
- DOE. 2018b. Protective action criteria (PAC) with AEGs, ERPGs, & TEELs: Rev. 29A, June 2018. U.S. Department of Energy. <https://edms3.energy.gov/pac/>. July 6, 2022.
- DOI. 1985. Mercury. Mineral facts and problems. Washington, DC: U.S. Department of the Interior. 499-508. Bureau of Mines Bulletin 675.
- DOI. 1989. Mercury. In: Minerals yearbook. Washington, DC: U.S. Department of the Interior, 705-708.
- DOI. 1990. Mercury. In: Minerals yearbook. Washington, DC: U.S. Department of the Interior, 743-747.
- DOI. 1991. Mineral commodity summaries, 1991: Mercury. Washington, DC: Department of the Interior.
- DOI. 1993. Mineral commodity summaries, 1993: Mercury. Washington, DC: U.S. Department of the Interior.
- Dolar SG, Keeney DR, Chesters G. 1971. Mercury accumulation by *Myriophyllum spicatum* L. *Environ Lett* 1(3):191-198. <https://doi.org/10.1080/00139307109434981>.
- Dolbec J, Mergler D, Sousa Passos CJ, et al. 2000. Methylmercury exposure affects motor performance of a riverine population of the Tapajos river, Brazilian Amazon. *Int Arch Occup Environ Health* 73(3):195-203. <https://doi.org/10.1007/s004200050027>.

8. REFERENCES

- Dolbec J, Mergler D, Larribe F, et al. 2001. Sequential analysis of hair mercury levels in relation to fish diet of an Amazonian population, Brazil. *Sci Total Environ* 271(1-3):87-97. [https://doi.org/10.1016/S0048-9697\(00\)00835-4](https://doi.org/10.1016/S0048-9697(00)00835-4).
- Dong Z, Jim RC, Hatley EL, et al. 2015. A longitudinal study of mercury exposure associated with consumption of freshwater fish from a reservoir in rural south central USA. *Environ Res* 136:155-162. <https://doi.org/10.1016/j.envres.2014.09.029>.
- Donohue A, Wagner CL, Burch JB, et al. 2018. Blood total mercury and methylmercury among pregnant mothers in Charleston, South Carolina, USA. *J Expo Sci Environ Epidemiol* 28(5):494-504. <https://doi.org/10.1038/s41370-018-0033-1>.
- Dore FY, Goulet S, Gallagher A, et al. 2001. Neurobehavioral changes in mice treated with methylmercury at two different stages of fetal development. *Neurotoxicol Teratol* 23(5):463-472. [https://doi.org/10.1016/S0892-0362\(01\)00167-2](https://doi.org/10.1016/S0892-0362(01)00167-2).
- Dorea JG, Marques RC, Isejima C. 2012. Neurodevelopment of Amazonian infants: antenatal and postnatal exposure to methyl- and ethylmercury. *J Biomed Biotechnol* 2012:1-9. <https://doi.org/10.1155/2012/132876>.
- Dorea JG, Marques RC, Abreu L. 2014. Milestone achievement and neurodevelopment of rural Amazonian toddlers (12 to 24 months) with different methylmercury and ethylmercury exposure. *J Toxicol Environ Health A* 77(1-3):1-13. <https://doi.org/10.1080/15287394.2014.861335>.
- dos Santos AA, Appel Hort M, Culbreth M, et al. 2016. Methylmercury and brain development: A review of recent literature. *J Trace Elem Med Biol* 38:99-107. <https://doi.org/10.1016/j.jtemb.2016.03.001>.
- dos Santos Freitas J, da Costa Brito Lacerda EM, da Silva Martins ICV, et al. 2018. Cross-sectional study to assess the association of color vision with mercury hair concentration in children from Brazilian Amazonian riverine communities. *Neurotoxicology* 65:60-67. <https://doi.org/10.1016/j.neuro.2018.02.006>.
- dos Santos-Lima C, Mourão DS, Carvalho CF, et al. 2020. Neuropsychological effects of mercury exposure in children and adolescents of the Amazon region, Brazil. *Neurotoxicology* 79:48-57. <https://doi.org/10.1016/j.neuro.2020.04.004>.
- dos Santos Chemelo V, Bittencourt LO, Aragão WAB, et al. 2021. Long-term exposure to inorganic mercury leads to oxidative stress in peripheral blood of adult rats. *Biol Trace Elem Res* 199(8):2992-3000. <https://doi.org/10.1007/s12011-020-02411-5>.
- Dou Y, Yin Y, Li Z, et al. 2022. Maternal exposure to metal mixtures during early pregnancy and fetal growth in the Jiangsu Birth Cohort, China. *Environ Res* 215(Pt 2):114305. <https://doi.org/10.1016/j.envres.2022.114305>.
- Downer MK, Martínez-González MA, Gea A, et al. 2017. Mercury exposure and risk of cardiovascular disease: a nested case-control study in the PREDIMED (PREvention with MEDiterranean Diet) study. *BMC Cardiovasc Disord* 17:9. <https://doi.org/10.1186/s12872-016-0435-8>.
- Drake HJ. 1981. Mercury. In: Mark HF, Othmer DF, Overberger CG, eds. *Kirk-Othmer encyclopedia of chemical technology*. New York, NY: John Wiley and Sons, Inc., 143-156.
- Drexler JZ, Alpers CN, Neymark LA, et al. 2016. A millennial-scale record of Pb and Hg contamination in peatlands of the Sacramento-San Joaquin Delta of California, USA. *Sci Total Environ* 551-552:738-751. <https://doi.org/10.1016/j.scitotenv.2016.01.201>.
- Druet P, Druet E, Potdevim F, et al. 1978. Immune type glomerulonephritis induced by HgCl₂ in the Brown Norway rat. *Ann Immunol* 129(6):777-792.
- Duan W, Xu C, Liu Q, et al. 2020. Levels of a mixture of heavy metals in blood and urine and all-cause, cardiovascular disease and cancer mortality: A population-based cohort study. *Environ Pollut* 263(Pt A):114630. <https://doi.org/10.1016/j.envpol.2020.114630>.
- Dunn JD, Clarkson TW, Magos L. 1978. Ethanol-increased exhalation of mercury in mice. *Br J Ind Med* 35(3):241-244. <https://doi.org/10.1136/oem.35.3.241>.
- Dutczak WJ, Ballatori N. 1992. gamma-Glutamyltransferase-dependent biliary-hepatic recycling of methyl mercury in the guinea pig. *J Pharmacol Exp Ther* 262(2):619-623.

8. REFERENCES

- Dutczak WJ, Ballatori N. 1994. Transport of the glutathione-methylmercury complex across liver canalicular membranes on reduced glutathione carriers. *J Biol Chem* 269(13):9746-9751.
- Dutczak WJ, Clarkson TW, Ballatori N. 1991. Biliary-hepatic recycling of a xenobiotic: Gallbladder absorption of methyl mercury. *Am J Physiol* 260(6 Pt 1):G873-880. <https://doi.org/10.1152/ajpgi.1991.260.6.G873>.
- Dvonch JT, Vette AF, Keeler GJ. 1995. An intensive multi-site pilot study investigating atmospheric mercury in Broward County, Florida. In: Porcella DB, Wheatley B, eds. *Mercury as a global pollutant. Proceedings of the third International Conference Whistler, British Columbia, July 10-14, 1994*. Boston, MA: Kluwer Academic Publishers, 169-178.
- Dyall-Smith DJ, Scurry JP. 1990. Mercury pigmentation and high mercury levels from the use of a cosmetic cream. *Med J Aust* 153(7):409-410 to 414-405.
- Echeverria D, Aposhian HV, Woods JS, et al. 1998. Neurobehavioral effects from exposure to dental amalgam Hg⁰: new distinctions between recent exposure and Hg body burden. *FASEB J* 12(11):971-980. <https://doi.org/10.1096/fasebj.12.11.971>.
- Echeverria D, Woods JS, Heyer NJ, et al. 2005. Chronic low-level mercury exposure, BDNF polymorphism, and associations with cognitive and motor function. *Neurotoxicol Teratol* 27(6):781-796. <https://doi.org/10.1016/j.ntt.2005.08.001>.
- EFSA. 2012. Scientific Opinion on the risk for public health related to the presence of mercury and methylmercury in food. *EFSA J* 10(12):2985. <https://doi.org/10.2903/j.efsa.2012.2985>.
- EFSA. 2014. Scientific Opinion on health benefits of seafood (fish and shellfish) consumption in relation to health risks associated with exposure to methylmercury. *EFSA J* 12(7):3761. <https://doi.org/10.2903/j.efsa.2014.3761>.
- Egwunye J, Cardoso BR, Braat S, et al. 2023. The role of fingernail selenium in the association between arsenic, lead and mercury and child development in rural Vietnam: a cross-sectional analysis. *Br J Nutr* 129(9):1589-1597. <https://doi.org/10.1017/s0007114522001374>.
- Ehrenberg RL, Vogt RL, Smith AB, et al. 1991. Effects of elemental mercury exposure at a thermometer plant. *Am J Ind Med* 19(4):495-507.
- Ehrenstein C, Shu P, Wickenheiser EB, et al. 2002. Methyl mercury uptake and associations with the induction of chromosomal aberrations in Chinese hamster ovary (CHO) cells. *Chem Biol Interact* 141(3):259-274.
- Eichholz GG, Petelka MF, Kury RL. 1988. Migration of elemental mercury through soil from simulated burial sites. *Water Res* 22(1):15-20. [https://doi.org/10.1016/0043-1354\(88\)90126-1](https://doi.org/10.1016/0043-1354(88)90126-1).
- Ekino S, Susa M, Ninomiya T, et al. 2007. Minamata disease revisited: an update on the acute and chronic manifestations of methyl mercury poisoning. *J Neurol Sci* 262(1-2):131-144. <https://doi.org/10.1016/j.jns.2007.06.036>.
- Ekstrand J, Nielsen JB, Havarinasab S, et al. 2010. Mercury toxicokinetics-dependency on strain and gender. *Toxicol Appl Pharmacol* 243(3):283-291. <https://doi.org/10.1016/j.taap.2009.08.026>.
- El-Badry A, Rezk M, El-Sayed H. 2018. Mercury-induced oxidative stress may adversely affect pregnancy outcome among dental staff: A cohort study. *Int J Occup Environ Med* 9(3):113-119. <https://doi.org/10.15171/ijoem.2018.1181>.
- Ellingsen DG, Holland RI, Thomassen Y, et al. 1993. Mercury and selenium in workers previously exposed to mercury vapour at a chloralkali plant. *Br J Ind Med* 50(8):745-752.
- Ellingsen DG, Efskind J, Berg KJ, et al. 2000a. Renal and immunologic markers for chloralkali workers with low exposure to mercury vapor. *Scand J Work Environ Health* 26(5):427-435. <https://doi.org/10.5271/sjweh.564>.
- Ellingsen DG, Efskind J, Haug E, et al. 2000b. Effects of low mercury vapour exposure on the thyroid function in chloralkali workers. *J Appl Toxicol* 20(6):483-489. [https://doi.org/10.1002/1099-1263\(200011/12\)20:6<483::aid-jat722>3.0.co;2-i](https://doi.org/10.1002/1099-1263(200011/12)20:6<483::aid-jat722>3.0.co;2-i).
- Ellingsen DG, Bast-Pettersen R, Efskind J, et al. 2001. Neuropsychological effects of low mercury vapor exposure in chloralkali workers. *Neurotoxicology* 22(2):249-258. [https://doi.org/10.1016/s0161-813x\(01\)00012-2](https://doi.org/10.1016/s0161-813x(01)00012-2).

8. REFERENCES

- El-Masri HA, Mumtaz MM, Yushak ML. 2004. Application of physiologically-based pharmacokinetic modeling to investigate the toxicological interaction between chlorpyrifos and parathion in the rat. *Environ Toxicol Pharmacol* 16(1-2):57-71. <https://doi.org/10.1016/j.etap.2003.10.002>.
- El-Sherbeeney AM, Odom JV, Smith JE. 2006. Visual system manifestations due to systemic exposure to mercury. *Cutan Ocul Toxicol* 25(3):173-183. <https://doi.org/10.1080/15569520600860215>.
- Elsner J. 1991. Tactile-kinesthetic system of rats as an animal model for minimal brain dysfunction. *Arch Toxicol* 65(6):465-473. <https://doi.org/10.1007/BF01977358>.
- Emeny RT, Korrick SA, Li Z, et al. 2019. Prenatal exposure to mercury in relation to infant infections and respiratory symptoms in the New Hampshire Birth Cohort Study. *Environ Res* 171:523-529. <https://doi.org/10.1016/j.envres.2019.01.026>.
- Endo T, Nakaya S, Kimura R, et al. 1984. Gastrointestinal absorption of inorganic mercuric compounds in vivo and in situ. *Toxicol Appl Pharmacol* 74(2):223-229.
- Endo T, Nakaya S, Kimura R, et al. 1986. Gastrointestinal absorption of inorganic mercuric compounds in vitro. *Toxicol Appl Pharmacol* 83(2):187-196.
- Endo T, Nakaya S, Kimura R. 1990. Mechanisms of absorption of inorganic mercury from rat small intestine. III. Comparative absorption studies of inorganic mercuric compounds in vitro. *Pharmacol Toxicol* 66(5):347-353.
- Endo T, Nakaya S, Kimura R. 1991. Mechanisms of absorption of inorganic mercury from rat small intestine. IV: Effect of chelating agents and cysteine on absorption of mercuric chloride in situ and in vitro. *Pharmacol Toxicol* 68(3):171-176.
- Engqvist A, Colmsjo A, Skare I. 1998. Speciation of mercury excreted in feces from individuals with amalgam fillings. *Arch Environ Health* 53(3):205-213. <https://doi.org/10.1080/00039899809605697>.
- Engstrom K, Love TM, Watson GE, et al. 2016. Polymorphisms in ATP-binding cassette transporters associated with maternal methylmercury disposition and infant neurodevelopment in mother-infant pairs in the Seychelles Child Development Study. *Environ Int* 94:224-229. <https://doi.org/10.1016/j.envint.2016.05.027>.
- Eom SY, Choi SH, Ahn SJ, et al. 2014. Reference levels of blood mercury and association with metabolic syndrome in Korean adults. *Int Arch Occup Environ Health* 87(5):501-513. <https://doi.org/10.1007/s00420-013-0891-8>.
- EPA. 1971. Water quality criteria data book. Washington, DC: U.S. Environmental Protection Agency.
- EPA. 1975a. Emission standards. U.S. Environmental Protection Agency. Code of Federal Regulations. 40 CFR 61.52.
- EPA. 1975b. National emission standards for hazardous air pollutants, emissions standard. U.S. Environmental Protection Agency. Fed Regist 40:48302.
- EPA. 1979. Water related environmental fate of 129 priority pollutants, introduction and technical background, metals and inorganics, pesticides and PCBs. Washington, DC: U.S. Environmental Protection Agency. EPA440479029a.
- EPA. 1984. Pesticide assessment guidelines: Subdivision F. Hazard evaluation: human and domestic animals. Washington, DC: U.S. Environmental Protection Agency. EPA540984014. <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=910129CT.txt>. March 15, 2021.
- EPA. 1985. Drinking water criteria document for mercury. Washington, DC: U.S. Environmental Protection Agency. EPA600X841781. PB86117827.
- EPA. 1992. National study of chemical residues in fish. Volume I. Washington, DC: U.S. Environmental Protection Agency. EPA823R92008a.
- EPA. 1998. Hazard standard risk analysis - TSCA section 403: Risk analysis to support standards for lead in paint, dust, and soil. Washington, DC: U.S. Environmental Protection Agency. EPA747R97006. <https://www.epa.gov/lead/hazard-standard-risk-analysis-tsca-section-403>. January 15, 2021.
- EPA. 1999a. Method IO-5: Sampling and analysis for vapor and particle phase mercury in ambient air utilizing cold vapor atomic fluorescence spectrometry (CVAFS). Compendium of methods for the

8. REFERENCES

- determination of inorganic compounds in ambient air. Cincinnati, OH: U.S. Environmental Protection Agency. EPA625R96010a. <https://www.epa.gov/sites/production/files/2015-07/documents/epa-io-5.pdf>. January 15, 2021.
- EPA. 1999b. National survey of mercury concentrations in fish data base summary 1990-1995. Washington, DC: U.S. Environmental Protection Agency. EPA823R99014.
- EPA. 2002a. Method 1631, Revision E: Mercury in water by oxidation, purge and trap, and cold vapor atomic fluorescence spectrometry. Washington, DC: U.S. Environmental Protection Agency. EPA821R02019. https://www.epa.gov/sites/production/files/2015-08/documents/method_1631e_2002.pdf. December 16, 2020.
- EPA. 2002b. Task force on ritualistic use of mercury report. Washington, DC: U.S. Environmental Protection Agency. EPA540R01005. <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=90100100.txt>. June 24, 2024.
- EPA. 2006. Report: EPA is properly addressing the risks of using mercury in rituals. Washington, DC: U.S. Environmental Protection Agency. EPA2006P00031. <https://www.epaig.gov/report-epa-properly-addressing-risks-using-mercury-rituals>. June 24, 2024.
- EPA. 2008. Regulatory impact analysis of the proposed revisions to the National Ambient Air Quality Standards. U.S. Environmental Protection Agency.
- EPA. 2009. National primary drinking water regulations. Washington, DC: U.S. Environmental Protection Agency. EPA816F09004. https://www.epa.gov/sites/production/files/2016-06/documents/npwdr_complete_table.pdf. August 2, 2019.
- EPA. 2011. Exposure factors handbook: 2011 edition. Washington, DC: U.S. Environmental Protection Agency. EPA600R09052F.
- EPA. 2018a. 2018 Edition of the drinking water standards and health advisories. Washington, DC: U.S. Environmental Protection Agency. EPA822F18001. <https://www.epa.gov/system/files/documents/2022-01/dwtable2018.pdf>. June 15, 2022.
- EPA. 2018b. Compiled AEGL values. U.S. Environmental Protection Agency. https://www.epa.gov/sites/production/files/2018-08/documents/compiled_aegls_update_27jul2018.pdf. April 12, 2020.
- EPA. 2018c. About acute exposure guideline levels (AEGLs). U.S. Environmental Protection Agency. <https://www.epa.gov/aegl/about-acute-exposure-guideline-levels-aegls>. July 26, 2018.
- EPA. 2019. Air quality system (AQS) data. U.S. Environmental Protection Agency. <https://www.epa.gov/aqs/obtaining-aqs-data>. December 18, 2020.
- EPA. 2020a. Introduction to the 2018 TRI National Analysis. U.S. Environmental Protection Agency. <https://www.epa.gov/trinationalanalysis/introduction-2018-tri-national-analysis>. December 18, 2020.
- EPA. 2020b. Inventory of mercury supply, use, and trade in the United States 2020 report. U.S. Environmental Protection Agency.
- EPA. 2021a. CompTox data: Mercuric (II) acetate. U.S. Environmental Protection Agency. <https://comptox.epa.gov/dashboard/dsstoxdb/results?search=DTXSID4042123#details>. May 17, 2021.
- EPA. 2021b. CompTox data: Methylmercuric chloride. U.S. Environmental Protection Agency. <https://comptox.epa.gov/dashboard/dsstoxdb/results?search=DTXSID5020813>. May 17, 2021.
- EPA. 2021c. CompTox data: Dimethyl mercury. U.S. Environmental Protection Agency. <https://comptox.epa.gov/dashboard/dsstoxdb/results?search=DTXSID5047742>. May 17, 2021.
- EPA. 2021d. CompTox data: Phenylmercuric acetate. U.S. Environmental Protection Agency. <https://comptox.epa.gov/dashboard/dsstoxdb/results?search=DTXSID7021150>. May 17, 2021.
- EPA. 2021e. CompTox data: Methyl mercury. U.S. Environmental Protection Agency. <https://comptox.epa.gov/dashboard/dsstoxdb/results?search=methyl%20mercury>. May 17, 2021.
- EPA. 2022. Toxic chemical release inventory reporting forms and instructions: Revised 2021 version. U.S. Environmental Protection Agency. EPA740B22002.

8. REFERENCES

- https://ordspub.epa.gov/ords/guideme_ext/guideme_ext/guideme/file/ry_2021_rfi.pdf. August 22, 2023.
- EPA. 2023. Inventory of mercury supply, use, and trade in the United States 2023 report. U.S. Environmental Protection Agency. <https://www.epa.gov/chemicals-under-tsca/epa-publishes-2023-mercury-inventory-report>. April 4, 2024.
- EPA. 2024. Annual summary data: Mercury. Air quality system (AQS): Concentration by monitor. U.S. Environmental Protection Agency. <https://www.epa.gov/aqs>. April 4, 2024.
- Erfurth EM, Schutz A, Nilsson A, et al. 1990. Normal pituitary hormone response to thyrotrophin and gonadotrophin releasing hormones in subjects exposed to elemental mercury vapour. *Occup Environ Med* 47(9):639-644. <https://doi.org/10.1136/oem.47.9.639>.
- Espinoza EO, Mann MJ, Bleasdel B. 1995. Arsenic and mercury in traditional Chinese herbal balls. *N Engl J Med* 333(12):803-804. <https://doi.org/10.1056/nejm199509213331217>.
- Espinoza EO, Mann M-J, Bleasdel B, et al. 1996. Toxic metals in selected traditional Chinese medicinals. *J Forensic Sci* 41(3):453-456. <https://doi.org/10.1520/jfs13934j>.
- Ethier AA, Muckle G, Bastien C, et al. 2012. Effects of environmental contaminant exposure on visual brain development: A prospective electrophysiological study in school-aged children. *Neurotoxicology* 33(5):1075-1085. <https://doi.org/10.1016/j.neuro.2012.05.010>.
- Eti S, Weisman R, Hoffman R, et al. 1995. Slight renal effect of mercury from amalgam fillings. *Pharmacol Toxicol* 76(1):47-49. <https://doi.org/10.1111/j.1600-0773.1995.tb00101.x>.
- Eto K, Yasutake A, Kuwana T, et al. 2001. Methylmercury poisoning in common marmosets—a study of selective vulnerability within the cerebral cortex. *Toxicol Pathol* 29(5):565-573. <https://doi.org/10.1080/019262301317226375>.
- Eto K, Tokunaga H, Nagashima K, et al. 2002. An autopsy case of Minamata disease (methylmercury poisoning)—pathological viewpoints of peripheral nerves. *Toxicol Pathol* 30(6):714-722. <https://doi.org/10.1080/01926230290166805>.
- Evans MS, Noguchi GE, Rice CP. 1991. The biomagnification of polychlorinated biphenyls, toxaphene, and DDT compounds in a Lake Michigan offshore food web. *Arch Environ Contam Toxicol* 20(1):87-93. <https://doi.org/10.1007/bf01065333>.
- Facemire CF, Gross TS, Guillette LJ. 1995. Reproductive impairment in the Florida panther: nature or nurture? *Environ Health Perspect* 103(Suppl 4):79-86.
- Factor-Litvak P, Hasselgren G, Jacobs D, et al. 2003. Mercury derived from dental amalgams and neuropsychologic function. *Environ Health Perspect* 111(5):719-723. <https://doi.org/10.1289/ehp.5879>.
- Fagundes BHF, Nascimento PC, Aragão WAB, et al. 2022. Methylmercury exposure during prenatal and postnatal neurodevelopment promotes oxidative stress associated with motor and cognitive damages in rats: an environmental-experimental toxicology study. *Toxicol Rep* 9:563-574. <https://doi.org/10.1016/j.toxrep.2022.02.014>.
- Fairey R, Taberski K, Lamerdin S, et al. 1997. Organochlorines and other environmental contaminants in muscle tissues of sportfish collected from San Francisco Bay. *Mar Pollut Bull* 34(12):1058-1071. [https://doi.org/10.1016/s0025-326x\(97\)00084-2](https://doi.org/10.1016/s0025-326x(97)00084-2).
- Fan Y, Zhang C, Bu J. 2017. Relationship between selected serum metallic elements and obesity in children and adolescent in the U.S. *Nutrients* 9(2):104. <https://doi.org/10.3390/nu9020104>.
- Farías P, Hernández-Bonilla D, Moreno-Macías H, et al. 2022. Prenatal co-exposure to manganese, mercury, and lead, and neurodevelopment in children during the first year of life. *Int J Environ Res Public Health* 19(20):13020. <https://doi.org/10.3390/ijerph192013020>.
- Farina M, Aschner M. 2017. Methylmercury-induced neurotoxicity: Focus on pro-oxidative events and related consequences. *Adv Neurobiol* 18:267-286. https://doi.org/10.1007/978-3-319-60189-2_13.
- Farris FF, Dedrick RL, Allen PV, et al. 1993. Physiological model for the pharmacokinetics of methyl mercury in the growing rat. *Toxicol Appl Pharmacol* 119(1):74-90. <https://doi.org/10.1006/taap.1993.1046>.

8. REFERENCES

- Farris FF, Kaushal A, Strom JG. 2008. Inorganic mercury pharmacokinetics in man: A two-compartment model. *Toxicol Environ Chem* 90(3):519-533. <https://doi.org/10.1080/02772240701602736>.
- Farzan SF, Howe CG, Chen Y, et al. 2021. Prenatal and postnatal mercury exposure and blood pressure in childhood. *Environ Int* 146:106201. <https://doi.org/10.1016/j.envint.2020.106201>.
- Fawer RF, de Ribaupierre Y, Guillemin MP, et al. 1983. Measurement of hand tremor induced by industrial exposure to metallic mercury. *Br J Ind Med* 40(2):204-208. <https://doi.org/10.1136/oem.40.2.204>.
- FDA. 2017a. Total diet study: Elements results summary statistics. Market baskets 2006 through 2013. U.S. Food and Drug Administration. <https://www.fda.gov/media/77948/download>. December 14, 2020.
- FDA. 2017b. Subpart B - Requirements for specific standardized beverages. Bottled water. U.S. Food and Drug Administration. Code of Federal Regulations. 21 CFR 165.110. <https://www.gpo.gov/fdsys/pkg/CFR-2017-title21-vol2/pdf/CFR-2017-title21-vol2-sec165-110.pdf>. September 7, 2017.
- FDA. 2018a. CPG sec 578.400 Treated grain seed - mercury residue. U.S. Food and Drug Administration. <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/cpg-sec-578400-treated-grain-seed-mercury-residue>. November 18, 2020.
- FDA. 2018b. CPG sec. 540.600 Fish, shellfish, crustaceans and other aquatic animals - fresh, frozen or processed - methyl mercury. U.S. Food and Drug Administration. <https://www.fda.gov/regulatory-information/search-fda-guidance-documents/cpg-sec-540600-fish-shellfish-crustaceans-and-other-aquatic-animals-fresh-frozen-or-processed-methyl>. November 18, 2020.
- FDA. 2022. Total diet study report: Fiscal years 2018-2020 elements data. U.S. Food and Drug Administration. <https://www.fda.gov/food/fda-total-diet-study-tds/fda-total-diet-study-tds-results>. April 4, 2024.
- FDA. 2023. Substances added to food. U.S. Food and Drug Administration. <https://www.cfsanappsexternal.fda.gov/scripts/fdcc/?set=FoodSubstances>. March 14, 2023.
- Fehling C, Abdulla M, Brun A, et al. 1975. Methylmercury poisoning in the rat: a combined neurological, chemical, and histopathological study. *Toxicol Appl Pharmacol* 33(1):27-37. [https://doi.org/10.1016/0041-008x\(75\)90240-9](https://doi.org/10.1016/0041-008x(75)90240-9).
- Feitosa-Santana C, Bimler DL, Paramei GV, et al. 2010. Color-space distortions following long-term occupational exposure to mercury vapor. *Ophthalmic Physiol Opt* 30(5):724-730. <https://doi.org/10.1111/j.1475-1313.2010.00764.x>.
- Feitosa-Santana C, Souza GDS, Sirius EVP, et al. 2018. Color vision impairment with low-level methylmercury exposure of an Amazonian population - Brazil. *Neurotoxicology* 66:179-184. <https://doi.org/10.1016/j.neuro.2018.01.010>.
- Feng W, Wang M, Li B, et al. 2004. Mercury and trace element distribution in organic tissues and regional brain of fetal rat after in utero and weaning exposure to low dose of inorganic mercury. *Toxicol Lett* 152(3):223-234. <https://doi.org/10.1016/j.toxlet.2004.05.001>.
- Feng L, Zhang C, Liu H, et al. 2020. Impact of low-level mercury exposure on intelligence quotient in children via rice consumption. *Ecotoxicol Environ Saf* 202:110870. <https://doi.org/10.1016/j.ecoenv.2020.110870>.
- Ferguson KK, Chin HB. 2017. Environmental chemicals and preterm birth: Biological mechanisms and the state of the science. *Curr Epidemiol Rep* 4(1):56-71. <https://doi.org/10.1007/s40471-017-0099-7>.
- Ferreira FF, Ammar D, Bourckhardt GF, et al. 2015. MeHg developing exposure causes DNA double-strand breaks and elicits cell cycle arrest in spinal cord cells. *J Toxicol* 2015:1-10. <https://doi.org/10.1155/2015/532691>.
- Fiedler N, Udasin I, Gochfeld M, et al. 1999. Neuropsychological and stress evaluation of a residential mercury exposure. *Environ Health Perspect* 107(5):343-347.

8. REFERENCES

- Fillion M, Mergler D, Sousa Passos CJ, et al. 2006. A preliminary study of mercury exposure and blood pressure in the Brazilian Amazon. *Environ Health* 5:29. <https://doi.org/10.1186/1476-069x-5-29>.
- Fischer C, Fredriksson A, Eriksson P. 2008. Coexposure of neonatal mice to a flame retardant PBDE 99 (2,2',4,4',5-pentabromodiphenyl ether) and methyl mercury enhances developmental neurotoxic defects. *Toxicol Sci* 101(2):275-285. <https://doi.org/10.1093/toxsci/kfm271>.
- Fiskesjo G. 1979. Two organic mercury compounds tested for mutagenicity in mammalian cells by use of the cell line V 79-4. *Hereditas* 90(1):103-109.
- Fitzgerald WF, Mason RP, Vandal GM. 1991. Atmospheric cycling and air-water exchange of mercury over mid-continental lacustrine regions. *Water Air Soil Pollut* 56(1):745-767. <https://doi.org/10.1007/bf00342314>.
- Fonfria E, Rodriguez-Farre E, Sunol C. 2001. Mercury interaction with the GABA(A) receptor modulates the benzodiazepine binding site in primary cultures of mouse cerebellar granule cells. *Neuropharmacology* 41(7):819-833.
- Forbes GB, Bruining GJ. 1976. Urinary creatinine excretion and lean body mass. *Am J Clin Nutr* 29(12):1359-1366. <https://doi.org/10.1093/ajcn/29.12.1359>.
- Fossato da Silva DA, Teixeira CT, Scarano WR, et al. 2011. Effects of methylmercury on male reproductive functions in Wistar rats. *Reprod Toxicol* 31(4):431-439. <https://doi.org/10.1016/j.reprotox.2011.01.002>.
- Fossato da Silva DA, Barbosa F, Scarano WR. 2012. Oral exposure to methylmercury modifies the prostatic microenvironment in adult rats. *Int J Exp Pathol* 93(5):354-360. <https://doi.org/10.1111/j.1365-2613.2012.00825.x>.
- Foster P, Gray LE. 2008. Toxic responses of the reproductive system. In: Klaassen CD, ed. *Casarett and Doull's toxicology: The basic science of poisons*. New York, NY: The McGraw-Hill Companies, Inc, 761-806.
- Foulkes EC. 1993. Metallothionein and glutathione as determinants of cellular retention and extrusion of cadmium and mercury. *Life Sci* 52(20):1617-1620. [https://doi.org/10.1016/0024-3205\(93\)90042-2](https://doi.org/10.1016/0024-3205(93)90042-2).
- Foulkes EC, Bergman D. 1993. Inorganic mercury absorption in mature and immature rat jejunum: Transcellular and intercellular pathways in vivo and in everted sacs. *Toxicol Appl Pharmacol* 120(1):89-95. <https://doi.org/10.1006/taap.1993.1090>.
- Fournie GJ, Saoudi A, Druet P, et al. 2002. Th2-type immunopathological manifestations induced by mercury chloride or gold salts in the rat: signal transduction pathways, cellular mechanisms and genetic control. *Autoimmun Rev* 1(4):205-212.
- Fowler SW. 1990. Critical review of selected heavy metal and chlorinated hydrocarbon concentrations in the marine environment. *Mar Environ Res* 29(1):1-64. [https://doi.org/10.1016/0141-1136\(90\)90027-1](https://doi.org/10.1016/0141-1136(90)90027-1).
- Fox B, Walsh CT. 1982. Mercuric reductase. Purification and characterization of a transposon-encoded flavoprotein containing an oxidation-reduction-active disulfide. *J Biol Chem* 257(5):2498-2503.
- Franco JL, Teixeira A, Meotti FC, et al. 2006. Cerebellar thiol status and motor deficit after lactational exposure to methylmercury. *Environ Res* 102(1):22-28. <https://doi.org/10.1016/j.envres.2006.02.003>.
- Franko A, Budihna MV, Dodic-Fikfak M. 2005. Long-term effects of elemental mercury on renal function in miners of the Idrija Mercury Mine. *Ann Occup Hyg* 49(6):521-527. <https://doi.org/10.1093/annhyg/mei022>.
- Franzblau A, d'Arcy H, Ishak MB, et al. 2012. Low-level mercury exposure and peripheral nerve function. *Neurotoxicology* 33(3):299-306. <https://doi.org/10.1016/j.neuro.2012.02.009>.
- Fredriksson A, Dahlgren L, Danielsson B, et al. 1992. Behavioural effects of neonatal metallic mercury exposure in rats. *Toxicology* 74(2-3):151-160. [https://doi.org/10.1016/0300-483x\(92\)90135-2](https://doi.org/10.1016/0300-483x(92)90135-2).
- Fredriksson A, Dencker L, Archer T, et al. 1996. Prenatal coexposure to metallic mercury vapour and methylmercury produce interactive behavioural changes in adult rats. *Neurotoxicol Teratol* 18(2):129-134. [https://doi.org/10.1016/0892-0362\(95\)02059-4](https://doi.org/10.1016/0892-0362(95)02059-4).

8. REFERENCES

- Freire C, Ramos R, Lopez-Espinosa MJ, et al. 2010. Hair mercury levels, fish consumption, and cognitive development in preschool children from Granada, Spain. *Environ Res* 110(1):96-104. <https://doi.org/10.1016/j.envres.2009.10.005>.
- Freire MAM, Lima RR, Nascimento PC, et al. 2020. Effects of methylmercury on the pattern of NADPH diaphorase expression and astrocytic activation in the rat. *Ecotoxicol Environ Saf* 201:110799. <https://doi.org/10.1016/j.ecoenv.2020.110799>.
- Frentiu T, Pintican BP, Butaciu S, et al. 2013. Determination, speciation and distribution of mercury in soil in the surroundings of a former chlor-alkali plant: assessment of sequential extraction procedure and analytical technique. *Chem Cent J* 7(1):178. <https://doi.org/10.1186/1752-153x-7-178>.
- Frenzilli G, Bosco E, Barale R. 2000. Validation of single cell gel assay in human leukocytes with 18 reference compounds. *Mutat Res* 468(2):93-108.
- Fretham SJ, Caito S, Martinez-Finley EJ, et al. 2012. Mechanisms and modifiers of methylmercury-induced neurotoxicity. *Toxicol Res* 1(1):32-38. <https://doi.org/10.1039/c2tx20010d>.
- Friberg L, Nordberg F. 1973. Inorganic mercury-a toxicological and epidemiological appraisal. In: Miller MW, Clarkson TW, eds. *Mercury, mercurials and mercaptans*. Springfield, IL: Charles C. Thomas, 5-22.
- Friberg L, Skog E, Wahlberg JE. 1961. Resorption of mercuric chloride and methyl mercury dicyandiamide in guinea-pigs through normal skin and through skin pretreated with acetone, alkylaryl-sulphonate and soap. *Acta Derm Venereol* 41:40-52.
- Friedmann AS, Chen H, Rabuck LD, et al. 1998. Accumulation of dietary methylmercury in the testes of the adult Brown Norway rat: Impaired testicular and epididymal function. *Environ Toxicol Chem* 17(5):867-871.
- Fruh V, Rifas-Shiman SL, Coull BA, et al. 2021. Prenatal exposure to a mixture of elements and neurobehavioral outcomes in mid-childhood: Results from Project Viva. *Environ Res* 201:111540. <https://doi.org/10.1016/j.envres.2021.111540>.
- Frumkin H, Letz R, Williams PL, et al. 2001. Health effects of long-term mercury exposure among chloralkali plant workers. *Am J Ind Med* 39(1):1-18. [https://doi.org/10.1002/1097-0274\(200101\)39:1<1::aid-ajim1>3.0.co;2-n](https://doi.org/10.1002/1097-0274(200101)39:1<1::aid-ajim1>3.0.co;2-n).
- Fujimura M, Usuki F. 2014. Low in situ expression of antioxidative enzymes in rat cerebellar granular cells susceptible to methylmercury. *Arch Toxicol* 88(1):109-113. <https://doi.org/10.1007/s00204-013-1089-2>.
- Fujimura M, Usuki F, Sawada M, et al. 2009. Methylmercury induces neuropathological changes with tau hyperphosphorylation mainly through the activation of the c-jun-N-terminal kinase pathway in the cerebral cortex, but not in the hippocampus of the mouse brain. *Neurotoxicology* 30(6):1000-1007. <https://doi.org/10.1016/j.neuro.2009.08.001>.
- Fujimura M, Cheng J, Zhao W. 2012. Perinatal exposure to low-dose methylmercury induces dysfunction of motor coordination with decreases in synaptophysin expression in the cerebellar granule cells of rats. *Brain Res* 1464:1-7. <https://doi.org/10.1016/j.brainres.2012.05.012>.
- Fujita M, Takabatake E. 1977. Mercury levels in human maternal and neonatal blood, hair and milk. *Bull Environ Contam Toxicol* 18(2):205-209. <https://doi.org/10.1007/bf01686068>.
- Fukuda K. 1971. Metallic mercury induced tremor in rabbits and mercury content of the central nervous system. *Br J Ind Med* 28(3):308-311. <https://doi.org/10.1136/oem.28.3.308>.
- Futatsuka M, Kitano T, Nagano M, et al. 1992. An epidemiological study with risk analysis of liver diseases in the general population living in a methyl mercury polluted area. *J Epidemiol Community Health* 46(3):237-240.
- Futatsuka M, Kitano T, Shono M, et al. 2000. Health surveillance in the population living in a methyl mercury-polluted area over a long period. *Environ Res* 83(2):83-92. <https://doi.org/10.1006/enrs.1999.4014>.
- Futatsuka M, Kitano T, Shono M, et al. 2005. Long-term follow-up study of health status in population living in methylmercury-polluted area. *Environ Sci* 12(5):239-282.

8. REFERENCES

- Fuyuta M, Fujimoto T, Hirata S. 1978. Embryotoxic effects of methylmercuric chloride administered to mice and rats during organogenesis. *Teratology* 18(3):353-365. <https://doi.org/10.1002/tera.1420180310>.
- Fuyuta M, Fujimoto T, Kiyofuji E. 1979. Teratogenic effects of a single oral administration of methylmercuric chloride in mice. *Acta Anat (Basel)* 104(3):356-362. <https://doi.org/10.1159/000145084>.
- Gale TF. 1974. Embryopathic effects of different routes of administration of mercuric acetate in the hamster. *Environ Res* 8(2):207-213. [https://doi.org/10.1016/0013-9351\(74\)90052-8](https://doi.org/10.1016/0013-9351(74)90052-8).
- Galic N, Prpic-Mehiic G, Prester LJ, et al. 2001. Elimination of mercury from amalgam in rats. *J Trace Elem Med Biol* 15(1):1-4.
- Galiciolli MEA, Pedroso TF, Mesquita M, et al. 2022. Biochemical parameters of female Wistar rats and their offspring exposed to inorganic mercury in drinking water during the gestational and lactational periods. *Toxics* 10(11):664. <https://doi.org/10.3390/toxics10110664>.
- Gallagher CM, Meliker JR. 2012. Mercury and thyroid autoantibodies in U.S. women, NHANES 2007-2008. *Environ Int* 40:39-43. <https://doi.org/10.1016/j.envint.2011.11.014>.
- Gallagher CM, McElroy AE, Smith DM, et al. 2013. Polychlorinated biphenyls, mercury, and antinuclear antibody positivity, NHANES 2003-2004. *Int J Hyg Environ Health* 216(6):721-727. <https://doi.org/10.1016/j.ijheh.2013.01.004>.
- Gandhi DN, Panchal GM, Dhull DK. 2013. Influence of gestational exposure on the effects of prenatal exposure to methyl mercury on postnatal development in rats. *Cent Eur J Public Health* 21(1):30-35. <https://doi.org/10.21101/cejph.a3773>.
- Gao ZY, Li MM, Wang J, et al. 2018. Blood mercury concentration, fish consumption and anthropometry in Chinese children: A national study. *Environ Int* 110:14-21. <https://doi.org/10.1016/j.envint.2017.08.016>.
- Gao W, Tong L, Zhao S, et al. 2022. Exposure to Cadmium, lead, mercury, and arsenic and uric acid levels: Results from NHANES 2007-2016. *Biol Trace Elem Res* 201(4):1659-1669. <https://doi.org/10.1007/s12011-022-03309-0>.
- Garcia-Fortea P, Cohen-Corcia I, Cordoba-Dona JA, et al. 2018. Toxic elements in hair and in vitro fertilization outcomes: A prospective cohort study. *Reprod Toxicol* 77:43-52. <https://doi.org/10.1016/j.reprotox.2018.02.001>.
- Garetano G, Stern AH, Robson M, et al. 2008. Mercury vapor in residential building common areas in communities where mercury is used for cultural purposes versus a reference community. *Sci Total Environ* 397(1-3):131-139. <https://doi.org/10.1016/j.scitotenv.2008.02.034>.
- Garí M, Grzesiak M, Krekora M, et al. 2022. Prenatal exposure to neurotoxic metals and micronutrients and neurodevelopmental outcomes in early school age children from Poland. *Environ Res* 204(Pt B):112049. <https://doi.org/10.1016/j.envres.2021.112049>.
- Garza-Lombo C, Posadas Y, Quintanar L, et al. 2018. Neurotoxicity linked to dysfunctional metal ion homeostasis and xenobiotic metal exposure: Redox signaling and oxidative stress. *Antioxid Redox Signal* 28:1669-1703. <https://doi.org/10.1089/ars.2017.7272>.
- Gavis J, Ferguson JF. 1972. The cycling of mercury through the environment. *Water Res* 6:989-1008.
- Gbemavo MCJ, Bouchard MF. 2021. Concentrations of lead, mercury, selenium, and manganese in blood and hand grip strength among adults living in the United States (NHANES 2011-2014). *Toxics* 9(8):189. <https://doi.org/10.3390/toxics9080189>.
- Gearhart JM, Clewell HJ, Crump KS, et al. 1995. Pharmacokinetic dose estimates of mercury in children and dose-response curves of performance tests in a large epidemiological study. *Water Air Soil Pollut* 80(1-4):49-58.
- Geffner ME, Sandler A. 1980. Oral metallic mercury: A folk medicine remedy for gastroenteritis. *Clin Pediatr (Phila)* 19(6):435-437. <https://doi.org/10.1177/000992288001900611>.
- Geier DA, Carmody T, Kern JK, et al. 2011. A significant relationship between mercury exposure from dental amalgams and urinary porphyrins: A further assessment of the Casa Pia children's dental amalgam trial. *Biometals* 24(2):215-224. <https://doi.org/10.1007/s10534-010-9387-0>.

8. REFERENCES

- Geier DA, Kern JK, Homme KG, et al. 2019. A cross-sectional study of blood ethylmercury levels and cognitive decline among older adults and the elderly in the United States. *J Alzheimers Dis* 72(3):901-910. <https://doi.org/10.3233/jad-190894>.
- Genchi G, Sinicropi MS, Carocci A, et al. 2017. Mercury exposure and heart diseases. *Int J Environ Res Public Health* 14(1):1-13. <https://doi.org/10.3390/ijerph14010074>.
- Genuis SJ, Birkholz D, Rodushkin I, et al. 2011. Blood, urine, and sweat (BUS) study: Monitoring and elimination of bioaccumulated toxic elements. *Arch Environ Contam Toxicol* 61(2):344-357. <https://doi.org/10.1007/s00244-010-9611-5>.
- George CR. 2011. Mercury and the kidney. *J Nephrol* 24(Suppl 17):S126-132. <https://doi.org/10.5301/jn.2011.6486>.
- George GN, Singh SP, Myers GJ, et al. 2010. The chemical forms of mercury in human hair: a study using X-ray absorption spectroscopy. *J Biol Inorg Chem* 15(5):709-715. <https://doi.org/10.1007/s00775-010-0638-x>.
- Gerald AC, Ganapathy S, Zhu J, et al. 2023. Exposure to endocrine-disrupting metals and serum estrogen levels among US women. *Reprod Toxicol* 118:108392. <https://doi.org/10.1016/j.reprotox.2023.108392>.
- Ghizoni H, Ventura M, Colle D, et al. 2018. Effects of perinatal exposure to n-3 polyunsaturated fatty acids and methylmercury on cerebellar and behavioral parameters in mice. *Food Chem Toxicol* 120:603-615. <https://doi.org/10.1016/j.fct.2018.08.004>.
- Ghosh AK, Sen S, Sharma A, et al. 1991. Effect of chlorophyllin on mercuric chloride-induced clastogenicity in mice. *Food Chem Toxicol* 29(11):777-779.
- Gilbert SG, Burbacher TM, Rice DC. 1993. Effects of in utero methylmercury exposure on a spatial delayed alternation task in monkeys. *Toxicol Appl Pharmacol* 123(1):130-136. <https://doi.org/10.1006/taap.1993.1229>.
- Gilbert SG, Rice DC, Burbacher TM. 1996. Fixed interval/fixed ratio performance in adult monkeys exposed in utero to methylmercury. *Neurotoxicol Teratol* 18(5):539-546.
- Gill GA, Guentzel JL, Landing WM, et al. 1995. Total gaseous mercury measurements in Florida: the FAMS project (1992-1994). In: Porcella DB, Wheatley B, eds. *Mercury as a global pollutant. Proceedings of the Third International Conference Whistler, British Columbia, July 10-14, 1994*. Boston, MA: Kluwer Academic Publishers, 235-244.
- Gilmour CC, Henry EA. 1991. Mercury methylation in aquatic systems affected by acid deposition. *Environ Pollut* 71(2-4):131-170.
- Giménez-Llort L, Ahlbom E, Dare E, et al. 2001. Prenatal exposure to methylmercury changes dopamine-modulated motor activity during early ontogeny: age and gender-dependent effects. *Environ Toxicol Pharmacol* 9(3):61-70. [https://doi.org/10.1016/s1382-6689\(00\)00060-0](https://doi.org/10.1016/s1382-6689(00)00060-0).
- Gionfriddo CM, Tate MT, Wick RR, et al. 2016. Microbial mercury methylation in Antarctic sea ice. *Nat Microbiol* 1(10):1-12. <https://doi.org/10.1038/nmicrobiol.2016.127>.
- Giovanoli-Jakubczak T, Greenwood MR, Smith JC, et al. 1974. Determination of total and inorganic mercury in hair by flameless atomic absorption, and of methylmercury by gas chromatography. *Clin Chem* 20(2):222-229.
- Glass GE, Sorensen JA, Schmidt KW, et al. 1990. New source identification of mercury contamination in the Great Lakes. *Environ Sci Technol* 24(7):1059-1069. <https://doi.org/10.1021/es00077a017>.
- Glass GE, Sorensen JA, Schmidt KW, et al. 1991. Mercury deposition and sources for the upper Great Lakes region. *Water Air Soil Pollut* 56(1):235-249. <https://doi.org/10.1007/bf00342274>.
- Gokoel AR, Zijlmans W, Covert HH, et al. 2020. Influence of prenatal exposure to mercury, perceived stress, and depression on birth outcomes in Suriname: Results from the MeKiTamara Study. *Int J Environ Res Public Health* 17(12):4444. <https://doi.org/10.3390/ijerph17124444>.
- Golding J, Gregory S, Emond A, et al. 2016a. Prenatal mercury exposure and offspring behaviour in childhood and adolescence. *Neurotoxicology* 57:87-94. <https://doi.org/10.1016/j.neuro.2016.09.003>.

8. REFERENCES

- Golding J, Gregory S, Iles-Caven Y, et al. 2016b. Associations between prenatal mercury exposure and early child development in the ALSPAC study. *Neurotoxicology* 53:215-222. <https://doi.org/10.1016/j.neuro.2016.02.006>.
- Golding J, Hibbeln JR, Gregory SM, et al. 2017. Maternal prenatal blood mercury is not adversely associated with offspring IQ at 8 years provided the mother eats fish: A British prebirth cohort study. *Int J Hyg Environ Health* 220(7):1161-1167. <https://doi.org/10.1016/j.ijheh.2017.07.004>.
- Golding J, Rai D, Gregory S, et al. 2018. Prenatal mercury exposure and features of autism: a prospective population study. *Mol Autism* 9:30. <https://doi.org/10.1186/s13229-018-0215-7>.
- Goldman M, Blackburn P. 1979. The effect of mercuric chloride on thyroid function in the rat. *Toxicol Appl Pharmacol* 48(1 Pt 1):49-55. [https://doi.org/10.1016/s0041-008x\(79\)80007-1](https://doi.org/10.1016/s0041-008x(79)80007-1).
- Gonzalez-Raymat H, Liu G, Liriano C, et al. 2017. Elemental mercury: Its unique properties affect its behavior and fate in the environment. *Environ Pollut* 229:69-86. <https://doi.org/10.1016/j.envpol.2017.04.101>.
- Goodrich JM, Wang Y, Gillespie B, et al. 2013. Methylmercury and elemental mercury differentially associate with blood pressure among dental professionals. *Int J Hyg Environ Health* 216(2):195-201. <https://doi.org/10.1016/j.ijheh.2012.03.001>.
- Goodsite ME, Outridge PM, Christensen JH, et al. 2013. How well do environmental archives of atmospheric mercury deposition in the Arctic reproduce rates and trends depicted by atmospheric models and measurements? *Sci Total Environ* 452-453:196-207. <https://doi.org/10.1016/j.scitotenv.2013.02.052>.
- Gore I, Harding SM. 1987. Sinker lung: Acute metallic mercury poisoning associated with the making of fishing weights. *Ala J Med Sci* 24(3):267-269.
- Gosselin NH, Brunet RC, Carrier G, et al. 2006. Reconstruction of methylmercury intakes in indigenous populations from biomarker data. *J Expo Sci Environ Epidemiol* 16(1):19-29. <https://doi.org/10.1038/sj.jea.7500433>.
- Gotelli CA, Astolfi E, Cox C, et al. 1985. Early biochemical effects of an organic mercury fungicide on infants: "Dose makes the poison". *Science* 227(4687):638. <https://doi.org/10.1126/science.2857500>.
- Goulet S, Dore FY, Mirault ME. 2003. Neurobehavioral changes in mice chronically exposed to methylmercury during fetal and early postnatal development. *Neurotoxicol Teratol* 25(3):335-347. [https://doi.org/10.1016/s0892-0362\(03\)00007-2](https://doi.org/10.1016/s0892-0362(03)00007-2).
- Gouveia N, Buzzo ML, Grossi MGL, et al. 2019. Occupational exposure to mercury in recycling cooperatives from the metropolitan region of São Paulo, Brazil. *Cien Saude Colet* 24(4):1517-1526. <https://doi.org/10.1590/1413-81232018244.01332017>.
- Govarts E, Remy S, Bruckers L, et al. 2016. Combined effects of prenatal exposures to environmental chemicals on birth weight. *Int J Environ Res Public Health* 13(5):495. <https://doi.org/10.3390/ijerph13050495>.
- Grabo TN. 1997. Unknown toxic exposures. Arts and crafts materials. *AAOHN J* 45(3):124-130.
- Granato TC, Pietz RI, Gschwind J, et al. 1995. Mercury in soils and crops from fields receiving high cumulative sewage sludge applications: Validation of U.S. EPA's risk assessment for human ingestion. In: Porcella DB, Wheatley B, eds. *Mercury as a global pollutant. Proceedings of the Third International Conference Whistler, British Columbia, July 10-14, 1994*. Boston, MA: Kluwer Academic Publishers, 1119-1127.
- Grandjean P, Budtz-Jorgensen E. 2007. Total imprecision of exposure biomarkers: implications for calculating exposure limits. *Am J Ind Med* 50(10):712-719. <https://doi.org/10.1002/ajim.20474>.
- Grandjean P, Yorifuji T. 2012. Mercury. In: Bingham E, Cohrssen B, eds. *Patty's toxicology*. New York, NY: Wiley, 213-227.
- Grandjean P, Weihe P, White RF. 1995. Milestone development in infants exposed to methylmercury from human milk. *Neurotoxicology* 16(1):27-33.
- Grandjean P, Weihe P, Jorgensen PJ, et al. 1992. Impact of maternal seafood diet on fetal exposure to mercury, selenium, and lead. *Arch Environ Health* 47(3):185-195. <https://doi.org/10.1080/00039896.1992.9938348>.

8. REFERENCES

- Grandjean P, Weihe P, White RF, et al. 1997. Cognitive deficit in 7-year-old children with prenatal exposure to methylmercury. *Neurotoxicol Teratol* 19(6):417-428. [https://doi.org/10.1016/s0892-0362\(97\)00097-4](https://doi.org/10.1016/s0892-0362(97)00097-4).
- Grandjean P, Weihe P, White RF, et al. 1998. Cognitive performance of children prenatally exposed to "safe" levels of methylmercury. *Environ Res* 77(2):165-172. <https://doi.org/10.1006/enrs.1997.3804>.
- Grandjean P, Budtz-Jorgensen E, White RF, et al. 1999. Methylmercury exposure biomarkers as indicators of neurotoxicity in children aged 7 years. *Am J Epidemiol* 150(3):301-305. <https://doi.org/10.1093/oxfordjournals.aje.a010002>.
- Grandjean P, Bjerne KS, Weihe P, et al. 2001. Birthweight in a fishing community: Significance of essential fatty acids and marine food contaminants. *Int J Epidemiol* 30(6):1272-1278. <https://doi.org/10.1093/ije/30.6.1272>.
- Grandjean P, Budtz-Jorgensen E, Steuerwald U, et al. 2003. Attenuated growth of breast-fed children exposed to increased concentrations of methylmercury and polychlorinated biphenyls. *FASEB J* 17(6):699-701. <https://doi.org/10.1096/fj.02-0661fje>.
- Grandjean P, Murata K, Budtz-Jorgensen E, et al. 2004a. Cardiac autonomic activity in methylmercury neurotoxicity: 14-year follow-up of a Faroese birth cohort. *J Pediatr* 144(2):169-176. <https://doi.org/10.1016/j.jpeds.2003.10.058>.
- Grandjean P, Budtz-Jorgensen E, Keiding N, et al. 2004b. Underestimation of risk due to exposure misclassification. *Int J Occup Med Environ Health* 17(1):131-136.
- Grandjean P, Poulsen LK, Heilmann C, et al. 2010. Allergy and sensitization during childhood associated with prenatal and lactational exposure to marine pollutants. *Environ Health Perspect* 118(10):1429-1433. <https://doi.org/10.1289/ehp.1002289>.
- Grandjean P, Weihe P, Debes F, et al. 2014. Neurotoxicity from prenatal and postnatal exposure to methylmercury. *Neurotoxicol Teratol* 43:39-44. <https://doi.org/10.1016/j.ntt.2014.03.004>.
- Greenwood MR. 1985. Methylmercury poisoning in Iraq. An epidemiological study of the 1971-1972 outbreak. *J Appl Toxicol* 5(3):148-159.
- Gregory S, Iles-Caven Y, Hibbeln JR, et al. 2016. Are prenatal mercury levels associated with subsequent blood pressure in childhood and adolescence? The Avon prebirth cohort study. *BMJ Open* 6(10):e012425. <https://doi.org/10.1136/bmjopen-2016-012425>.
- Gregus Z, Stein AF, Klaassen CD. 1987. Effect of inhibition of gamma-glutamyltranspeptidase on biliary and urinary excretion of glutathione-derived thiols and methylmercury. *J Pharmacol Exp Ther* 242(1):27-32.
- Gribble MO, Cheng A, Berger RD, et al. 2015. Mercury exposure and heart rate variability: A systematic review. *Curr Environ Health Rep* 2(3):304-314. <https://doi.org/10.1007/s40572-015-0053-0>.
- Grieb TM, Driscoll CT, Gloss SP, et al. 1990. Factors affecting mercury accumulation in fish in the upper Michigan peninsula. *Environ Toxicol Chem* 9(7):919-930.
- Grieb TM, Fisher NS, Karimi R, et al. 2020. An assessment of temporal trends in mercury concentrations in fish. *Ecotoxicology* 29(10):1739-1749. <https://doi.org/10.1007/s10646-019-02112-3>.
- Griffiths C, McGartland A, Miller M. 2007. A comparison of the monetized impact of IQ decrements from mercury emissions. *Environ Health Perspect* 115(6):841-847. <https://doi.org/10.1289/ehp.9797>.
- Grotto D, de Castro MM, Barcelos GR, et al. 2009a. Low level and sub-chronic exposure to methylmercury induces hypertension in rats: nitric oxide depletion and oxidative damage as possible mechanisms. *Arch Toxicol* 83(7):653-662. <https://doi.org/10.1007/s00204-009-0437-8>.
- Grotto D, Barcelos GR, Valentini J, et al. 2009b. Low levels of methylmercury induce DNA damage in rats: protective effects of selenium. *Arch Toxicol* 83(3):249-254. <https://doi.org/10.1007/s00204-008-0353-3>.

8. REFERENCES

- Grover P, Banu BS, Devi KD, et al. 2001. In vivo genotoxic effects of mercuric chloride in rat peripheral blood leucocytes using comet assay. *Toxicology* 167(3):191-197.
- Guallar E, Sanz-Gallardo MI, van't Veer P, et al. 2002. Mercury, fish oils, and the risk of myocardial infarction. *N Engl J Med* 347(22):1747-1754. <https://doi.org/10.1056/NEJMoa020157>.
- Guan T, Wu Z, Xu C, et al. 2023. The association of trace elements with arthritis in US adults: NHANES 2013-2016. *J Trace Elem Med Biol* 76:127122. <https://doi.org/10.1016/j.jtemb.2022.127122>.
- Guentzel JL, Landing WM, Gill GA, et al. 1995. Atmospheric deposition of mercury in Florida: the FAMS project (1992-1994). In: Porcella DB, Huckabee JW, eds. *Mercury as a global pollutant. Proceedings of the third International Conference Whistler, British Columbia, July 10-14, 1994.* Boston, MA: Kluwer Academic Publishers, 393-402.
- Guillamet E, Creus A, Farina M, et al. 2008. DNA-damage induction by eight metal compounds in TK6 human lymphoblastoid cells: results obtained with the alkaline Comet assay. *Mutat Res* 654(1):22-28. <https://doi.org/10.1016/j.mrgentox.2008.04.005>.
- Gul N, Khan S, Khan A, et al. 2016. Quantification of Hg excretion and distribution in biological samples of mercury-dental-amalgam users and its correlation with biological variables. *Environ Sci Pollut Res Int* 23(20):20580-20590. <https://doi.org/10.1007/s11356-016-7266-0>.
- Gundacker C, Gencik M, Hengstschlager M. 2010. The relevance of the individual genetic background for the toxicokinetics of two significant neurodevelopmental toxicants: mercury and lead. *Mutat Res* 705(2):130-140. <https://doi.org/10.1016/j.mrrev.2010.06.003>.
- Gundacker C, Graf-Rohrmeister K, Gencik M, et al. 2021. Gene variants determine placental transfer of perfluoroalkyl substances (PFAS), mercury (Hg) and lead (Pb), and birth outcome: findings from the UmMuKi Bratislava-Vienna Study. *Front Genet* 12:664946. <https://doi.org/10.3389/fgene.2021.664946>.
- Gunderson EL. 1988. FDA Total Diet Study, April 1982-April 1984, dietary intakes of pesticides, selected elements, and other chemicals. *J Assoc Off Anal Chem* 71(6):1200-1209.
- Guo BQ, Cai SZ, Guo JL, et al. 2013. Levels of prenatal mercury exposure and their relationships to neonatal anthropometry in Wujiang City, China. *Environ Pollut* 182:184-189. <https://doi.org/10.1016/j.envpol.2013.07.023>.
- Guo J, Wu C, Zhang J, et al. 2020a. Prenatal exposure to mixture of heavy metals, pesticides and phenols and IQ in children at 7 years of age: The SMBCS study. *Environ Int* 139:105692. <https://doi.org/10.1016/j.envint.2020.105692>.
- Guo J, Wu C, Zhang J, et al. 2020b. Supplemental material: Prenatal exposure to mixture of heavy metals, pesticides and phenols and IQ in children at 7 years of age: The SMBCS study. *Environ Int* 139 <https://doi.org/10.1016/j.envint.2020.105692>.
- Guo X, Li N, Wang H, et al. 2022. Combined exposure to multiple metals on cardiovascular disease in NHANES under five statistical models. *Environ Res* 215(Pt 3):114435. <https://doi.org/10.1016/j.envres.2022.114435>.
- Guo Y, Lv Y, Liu X, et al. 2023. Association between heavy metal mercury in body fluids and tissues and diabetes mellitus: a systematic review and meta-analysis. *Ann Transl Med* 11(2):114. <https://doi.org/10.21037/atm-22-6404>.
- Gupchup GV, Zatz J. 1999. Structural characteristics and permeability properties of the human nail: A review. *J Cosmet Sci* 50(6):363-385.
- Gustin K, Tofail F, Mehrin F, et al. 2017. Methylmercury exposure and cognitive abilities and behavior at 10 years of age. *Environ Int* 102:97-105. <https://doi.org/10.1016/j.envint.2017.02.004>.
- Gustin K, Barman M, Stråvik M, et al. 2020. Low-level maternal exposure to cadmium, lead, and mercury and birth outcomes in a Swedish prospective birth-cohort. *Environ Pollut* 265(Pt B):114986. <https://doi.org/10.1016/j.envpol.2020.114986>.
- Gworek B, Dmuchowski W, Baczewska AH, et al. 2017. Air contamination by mercury, emissions and transformations-a review. *Water Air Soil Pollut* 228(4):123. <https://doi.org/10.1007/s11270-017-3311-y>.

8. REFERENCES

- Gyrd-Hansen N. 1981. Toxicokinetics and methyl mercury in pigs. *Arch Toxicol* 48(2-3):173-181.
- Ha M, Kwon HJ, Lim MH, et al. 2009. Low blood levels of lead and mercury and symptoms of attention deficit hyperactivity in children: A report of the children's health and environment research (CHEER). *Neurotoxicology* 30(1):31-36. <https://doi.org/10.1016/j.neuro.2008.11.011>.
- Hadavifar M, Rastakhiz M, Souvizi B, et al. 2020. Biomonitoring of maternal and fetal exposure to mercury in Sabzevar and its affecting risk factors. *J Hazard Mater* 388:121781. <https://doi.org/10.1016/j.jhazmat.2019.121781>.
- Haddad JK, Stenberg E. 1963. Bronchitis due to acute mercury inhalation. Report of two cases. *Am Rev Respir Dis* 88:543-535. <https://doi.org/10.1164/arrd.1963.88.4.543>.
- Halbach S, Clarkson TW. 1978. Enzymatic oxidation of mercury vapor by erythrocytes. *Biochim Biophys Acta Enzymol* 523(2):522-531. [https://doi.org/10.1016/0005-2744\(78\)90055-4](https://doi.org/10.1016/0005-2744(78)90055-4).
- Halbach S, Welzl G, Kremers L, et al. 2000. Steady-state transfer and depletion kinetics of mercury from amalgam fillings. *Sci Total Environ* 259(1-3):13-21.
- Hales CM, Carroll MD, Fryar CD, et al. 2020. Prevalence of obesity and severe obesity among adults: United States, 2017–2018. Centers for Disease Control and Prevention. NCHS Data Brief No. 360. <https://www.cdc.gov/nchs/products/databriefs/db360.htm>. March 15, 2021.
- Hall LL, Allen PV, Fisher HL, et al. 1995. The kinetics of intravenously administered inorganic mercury in humans. In: Subramanian KN, Wastney ME, eds. *Kinetic models of trace element and mineral metabolism*. Boca Raton, FL: CRC Press, 265-280.
- Hall BD, Bodaly RA, Fudge RJP, et al. 1997. Food as the dominant pathway of methylmercury uptake by fish. *Water Air Soil Pollut* 100(1-2):13-24.
- Hallee TJ. 1969. Diffuse lung disease caused by inhalation of mercury vapor. *Am Rev Respir Dis* 99(3):430-436. <https://doi.org/10.1164/arrd.1969.99.3.430>.
- Hallgren CG, Hallmans G, Jansson JH, et al. 2001. Markers of high fish intake are associated with decreased risk of a first myocardial infarction. *Br J Nutr* 86(3):397-404. <https://doi.org/10.1079/bjn2001415>.
- Han DH, Lim SY, Sun BC, et al. 2009. Mercury exposure and periodontitis among a Korean population: The Shiwha-Banwol environmental health study. *J Periodontol* 80(12):1928-1936. <https://doi.org/10.1902/jop.2009.090293>.
- Handley J, Todd D, Burrows D. 1993. Mercury allergy in a contact dermatitis clinic in Northern Ireland. *Contact Dermatitis* 29(5):258-261. <https://doi.org/10.1111/j.1600-0536.1993.tb03561.x>.
- Hapke HJ. 1991. Metals accumulation in the food chain and load of feed and food. In: Merian E, ed. *Metals and their compounds in the environment*. Weinheim, Germany: VCH, 469-479.
- Harada M. 1995. Minamata disease: Methylmercury poisoning in Japan caused by environmental pollution. *Crit Rev Toxicol* 25(1):1-24. <https://doi.org/10.3109/10408449509089885>.
- Harada M, Nakanishi J, Konuma S, et al. 1998. The present mercury contents of scalp hair and clinical symptoms in inhabitants of the Minamata area. *Environ Res* 77(2):160-164. <https://doi.org/10.1006/enrs.1998.3837>.
- Harada M, Akagi H, Tsuda T, et al. 1999. Methylmercury level in umbilical cords from patients with congenital Minamata disease. *Sci Total Environ* 234(1-3):59-62.
- Harari R, Harari F, Gerhardsson L, et al. 2012. Exposure and toxic effects of elemental mercury in gold-mining activities in Ecuador. *Toxicol Lett* 213(1):75-82. <https://doi.org/10.1016/j.toxlet.2011.09.006>.
- Harry GJ, Harris MW, Burka LT. 2004. Mercury concentrations in brain and kidney following ethylmercury, methylmercury and Thimerosal administration to neonatal mice. *Toxicol Lett* 154(3):183-189. <https://doi.org/10.1016/j.toxlet.2004.07.014>.
- Harsh JB, Doner HE. 1981. Characterization of mercury in a river wash soil. *J Environ Qual* 10(3):333-337.
- Havarinasab S, Hultman P. 2005. Organic mercury compounds and autoimmunity. *Autoimmun Rev* 4(5):270-275. <https://doi.org/10.1016/j.autrev.2004.12.001>.

8. REFERENCES

- Havarinasab S, Bjorn E, Nielsen JB, et al. 2007. Mercury species in lymphoid and non-lymphoid tissues after exposure to methyl mercury: correlation with autoimmune parameters during and after treatment in susceptible mice. *Toxicol Appl Pharmacol* 221(1):21-28. <https://doi.org/10.1016/j.taap.2007.02.009>.
- Hayes AD, Rothstein A. 1962. The metabolism of inhaled mercury vapor in the rat studied by isotope techniques. *J Pharmacol Exp Ther* 138:1-10.
- He K, Xun P, Liu K, et al. 2013. Mercury exposure in young adulthood and incidence of diabetes later in life: The CARDIA trace element study. *Diabetes Care* 36(6):1584-1589. <https://doi.org/10.2337/dc12-1842>.
- He J, Zhao Y, Zhu T, et al. 2021. Mercury chloride impacts on the development of erythrocytes and megakaryocytes in mice. *Toxics* 9(10):252. <https://doi.org/10.3390/toxics9100252>.
- Heath JC, Abdelmageed Y, Braden TD, et al. 2009. The effects of chronic mercuric chloride ingestion in female Sprague-Dawley rats on fertility and reproduction. *Food Chem Toxicol* 47(7):1600-1605. <https://doi.org/10.1016/j.fct.2009.04.007>.
- Heath JC, Abdelmageed Y, Braden TD, et al. 2012. The effects of chronic ingestion of mercuric chloride on fertility and testosterone levels in male Sprague Dawley rats. *J Biomed Biotechnol* 2012:1-9. <https://doi.org/10.1155/2012/815186>.
- Heinrich J, Guo F, Trepka MJ. 2017. Brief report: Low-level mercury exposure and risk of asthma in school-age children. *Epidemiology* 28(1):116-118. <https://doi.org/10.1097/ede.0000000000000576>.
- Hellou J, Fancey LL, Payne JF. 1992. Concentrations of twenty-four elements in bluefin tuna, from the Northwest Atlantic. *Chemosphere* 24(2):211-218. [https://doi.org/10.1016/0045-6535\(92\)90394-7](https://doi.org/10.1016/0045-6535(92)90394-7).
- Hernández-Mendoza H, Álvarez-Loredo HE, Romero-Guzmán ET, et al. 2022. Relationship between serum levels of arsenic, cadmium, and mercury and body mass index and fasting plasma glucose in a Mexican adult population. *Biol Trace Elem Res* 200:4916-4923. <https://doi.org/10.1007/s12011-021-03081-7>.
- Herr DW, Chanda SM, Graff JE, et al. 2004. Evaluation of sensory evoked potentials in Long Evans rats gestationally exposed to mercury (Hg⁰) vapor. *Toxicol Sci* 82(1):193-206. <https://doi.org/10.1093/toxsci/kfh246>.
- Herrstrom P, Schutz A, Raihle G, et al. 1995. Dental amalgam, low-dose exposure to mercury, and urinary proteins in young Swedish men. *Arch Environ Health* 50(2):103-107. <https://doi.org/10.1080/00039896.1995.9940886>.
- Hertz-Picciotto I, Green PG, Delwiche L, et al. 2010. Blood mercury concentrations in CHARGE Study children with and without autism. *Environ Health Perspect* 118(1):161-166. <https://doi.org/10.1289/ehp.0900736>.
- Heyer NJ, Echeverria D, Bittner AC, et al. 2004. Chronic low-level mercury exposure, BDNF polymorphism, and associations with self-reported symptoms and mood. *Toxicol Sci* 81(2):354-363. <https://doi.org/10.1093/toxsci/kfh220>.
- Hibbeln J, Gregory S, Iles-Caven Y, et al. 2018. Total mercury exposure in early pregnancy has no adverse association with scholastic ability of the offspring particularly if the mother eats fish. *Environ Int* 116:108-115. <https://doi.org/10.1016/j.envint.2018.03.024>.
- Hinners T, Tsuchiya A, Stern AH, et al. 2012. Chronologically matched toenail-Hg to hair-Hg ratio: Temporal analysis within the Japanese community (U.S.). *Environ Health* 11:81. <https://doi.org/10.1186/1476-069x-11-81>.
- Hirai T, Abe O, Nakamura M, et al. 2023. Brain structural changes in patients with chronic methylmercury poisoning in Minamata. *Brain Res* 1805:148278. <https://doi.org/10.1016/j.brainres.2023.148278>.
- Hirano M, Mitsumori K, Maita K, et al. 1986. Further carcinogenicity study on methylmercury chloride in ICR mice. *Nihon Juigaku Zasshi* 48(1):127-135. <https://doi.org/10.1292/jvms1939.48.127>.
- Hirzy JW, Connett P, Xiang Q, et al. 2016. Developmental neurotoxicity of fluoride: A quantitative risk analysis towards establishing a safe daily dose of fluoride for children. *Fluoride* 49(4 Pt 1):379-400.
- Hoet P, Lison D. 1997. A nonoccupational source of mercury intoxication. *Clin Chem* 43(7):1248.

8. REFERENCES

- Hoffman HI, Bradley WG, Chen CY, et al. 2021. Amyotrophic lateral sclerosis risk, family income, and fish consumption estimates of mercury and omega-3 PUFAs in the United States. *Int J Environ Res Public Health* 18(9):4528. <https://doi.org/10.3390/ijerph18094528>.
- Högstedt B, Bratt I, Holmen A, et al. 1988. Frequency and size distribution of micronuclei in lymphocytes stimulated with phytohemagglutinin and pokeweed mitogen in workers exposed to piperazine. *Hereditas* 109(1):139-142. <https://doi.org/10.1111/j.1601-5223.1988.tb00194.x>.
- Højbjerg S, Nielsen JB, Andersen O. 1992. Effects of dietary lipids on whole-body retention and organ distribution of organic and inorganic mercury in mice. *Food Chem Toxicol* 30(8):703-708. [https://doi.org/10.1016/0278-6915\(92\)90166-i](https://doi.org/10.1016/0278-6915(92)90166-i).
- Hollins JG, Willes RF, Bryce FR, et al. 1975. The whole body retention and tissue distribution of [²⁰³Hg]methylmercury in adult cats. *Toxicol Appl Pharmacol* 33(3):438-449.
- Hoshino A, Pacheco-Ferreira H, Sanches SG, et al. 2015. Mercury exposure in a riverside Amazon population, Brazil: A study of the ototoxicity of methylmercury. *Int Arch Otorhinolaryngol* 19(2):135-140. <https://doi.org/10.1055/s-0034-1544115>.
- Houston MC. 2011. Role of mercury toxicity in hypertension, cardiovascular disease, and stroke. *J Clin Hypertens (Greenwich)* 13(8):621-627. <https://doi.org/10.1111/j.1751-7176.2011.00489.x>.
- Howard W, Leonard B, Moody W, et al. 1991. Induction of chromosome changes by metal compounds in cultured CHO cells. *Toxicol Lett* 56(1-2):179-186.
- Howe CG, Nozadi SS, Garcia E, et al. 2022. Prenatal metal(loid) mixtures and birth weight for gestational age: A pooled analysis of three cohorts participating in the ECHO program. *Environ Int* 161:107102. <https://doi.org/10.1016/j.envint.2022.107102>.
- Hsu YC, Chang CW, Lee HL, et al. 2016. Association between history of dental amalgam fillings and risk of Parkinson's disease: A population-based retrospective cohort study in Taiwan. *PLoS ONE* 11(12):e0166552. <https://doi.org/10.1371/journal.pone.0166552>.
- Hu G, Jin M, Lin X, et al. 2010. Mercury distribution in neonatal rat brain after intrauterine methylmercury exposure. *Environ Toxicol Pharmacol* 29(1):7-11. <https://doi.org/10.1016/j.etap.2009.08.006>.
- Hu Y, Chen L, Wang C, et al. 2016. Prenatal low-level mercury exposure and infant neurodevelopment at 12 months in rural northern China. *Environ Sci Pollut Res Int* 23(12):12050-12059. <https://doi.org/10.1007/s11356-016-6395-9>.
- Hu XF, Eccles KM, Chan HM. 2017. High selenium exposure lowers the odds ratios for hypertension, stroke, and myocardial infarction associated with mercury exposure among Inuit in Canada. *Environ Int* 102:200-206. <https://doi.org/10.1016/j.envint.2017.03.002>.
- Hu XF, Singh K, Chan HM. 2018. Mercury exposure, blood pressure, and hypertension: a systematic review and dose-response meta-analysis. *Environ Health Perspect* 126(7):076002. <https://doi.org/10.1289/ehp2863>.
- Hu XF, Lowe M, Chan HM. 2021. Mercury exposure, cardiovascular disease, and mortality: A systematic review and dose-response meta-analysis. *Environ Res* 193:110538. <https://doi.org/10.1016/j.envres.2020.110538>.
- Huang LS, Cox C, Wilding GE, et al. 2003. Using measurement error models to assess effects of prenatal and postnatal methylmercury exposure in the Seychelles Child Development Study. *Environ Res* 93(2):115-122.
- Huang LS, Cox C, Myers GJ, et al. 2005. Exploring nonlinear association between prenatal methylmercury exposure from fish consumption and child development: evaluation of the Seychelles Child Development Study nine-year data using semiparametric additive models. *Environ Res* 97(1):100-108. <https://doi.org/10.1016/j.envres.2004.05.004>.
- Huang LS, Myers GJ, Davidson PW, et al. 2007. Is susceptibility to prenatal methylmercury exposure from fish consumption non-homogeneous? Tree-structured analysis for the Seychelles Child Development Study. *Neurotoxicology* 28(6):1237-1244. <https://doi.org/10.1016/j.neuro.2007.08.009>.

8. REFERENCES

- Huang CF, Liu SH, Hsu CJ, et al. 2011. Neurotoxicological effects of low-dose methylmercury and mercuric chloride in developing offspring mice. *Toxicol Lett* 201(3):196-204. <https://doi.org/10.1016/j.toxlet.2010.12.016>.
- Huang LS, Cory-Slechta DA, Cox C, et al. 2018. Analysis of nonlinear associations between prenatal methylmercury exposure from fish consumption and neurodevelopmental outcomes in the Seychelles main cohort at 17 years. *Stoch Environ Res Risk Assess* 32(4):893-904. <https://doi.org/10.1007/s00477-017-1451-7>.
- Hughes JA, Annau Z. 1976. Postnatal behavioral effects in mice after prenatal exposure to methylmercury. *Pharmacol Biochem Behav* 4(4):385-391. [https://doi.org/10.1016/0091-3057\(76\)90052-6](https://doi.org/10.1016/0091-3057(76)90052-6).
- Hui LL, Chan MHM, Lam HS, et al. 2016. Impact of fetal and childhood mercury exposure on immune status in children. *Environ Res* 144(Pt A):66-72. <https://doi.org/10.1016/j.envres.2015.11.005>.
- Hultman P, Enestrom S. 1986. Localization of mercury in the kidney during experimental acute tubular necrosis studied by the cytochemical Silver Amplification method. *Br J Exp Pathol* 67(4):493-503.
- Hultman P, Johansson U. 1991. Strain differences in the effect of mercury on murine cell-mediated immune reactions. *Food Chem Toxicol* 29(9):633-638. [https://doi.org/10.1016/0278-6915\(91\)90146-x](https://doi.org/10.1016/0278-6915(91)90146-x).
- Hultman P, Enestrom S. 1992. Dose-response studies in murine mercury-induced autoimmunity and immune-complex disease. *Toxicol Appl Pharmacol* 113(2):199-208. [https://doi.org/10.1016/0041-008x\(92\)90115-9](https://doi.org/10.1016/0041-008x(92)90115-9).
- Hultman P, Nielsen JB. 2001. The effect of dose, gender, and non-H-2 genes in murine mercury-induced autoimmunity. *J Autoimmun* 17(1):27-37. <https://doi.org/10.1006/jaut.2001.0521>.
- Hultman P, Enestrom S, von Schenck H. 1985. Renal handling of inorganic mercury in mice. The early excretion phase following a single intravenous injection of mercuric chloride studied by the Silver Amplification method. *Virchows Arch B Cell Pathol Incl Mol Pathol* 49(3):209-224.
- Hurley JP, Watras CJ, Bloom NS. 1991. Mercury cycling in a northern Wisconsin seepage lake: The role of particulate matter in vertical transport. *Water Air Soil Pollut* 56(1):543-551. <https://doi.org/10.1007/bf00342298>.
- Hursh JB. 1985. Partition coefficients of mercury (203Hg) vapor between air and biological fluids. *J Appl Toxicol* 5(5):327-332. <https://doi.org/10.1002/jat.2550050512>.
- Hursh JB, Clarkson TW, Cherian MG, et al. 1976. Clearance of mercury (Hg-197, Hg-203) vapor inhaled by human subjects. *Arch Environ Health* 31:302-309.
- Hursh JB, Greenwood MR, Clarkson TW, et al. 1980. The effect of ethanol on the fate of mercury vapor inhaled by man. *J Pharmacol Exp Ther* 214(3):520-527.
- Hursh JB, Clarkson TW, Miles EF, et al. 1989. Percutaneous absorption of mercury vapor by man. *Arch Environ Health* 44(2):120-127. <https://doi.org/10.1080/00039896.1989.9934385>.
- Hwang GW, Lee JY, Ryoke K, et al. 2011. Gene expression profiling using DNA microarray analysis of the cerebellum of mice treated with methylmercury. *J Toxicol Sci* 36(3):389-391.
- Hytten F. 1985. Blood volume changes in normal pregnancy. *Clin Haematol* 14(3):601-612.
- IARC. 1993. Mercury and mercury compounds. In: IARC monographs on the evaluation of carcinogenic risks to humans. Volume 58. Beryllium, cadmium, mercury, and exposures in the glass manufacturing industry. Lyon, France: International Agency for Research on Cancer, 239-345. <https://publications.iarc.fr/76>. November 11, 2020.
- ICRP. 1980. Metabolic data for mercury. In: Limits for intakes of radionuclides by workers. Oxford, England: Pergamon Press, 59-63.
- ICRP. 1981. Report of the task group on reference man. New York, NY: International Commission on Radiological Protection. ICRP Publication 23.
- ICRP. 1994. Human respiratory tract model for radiological protection. International Commission on Radiological Protection. ICRP Publication 66.

8. REFERENCES

- Iesato K, Wakashin M, Wakashin Y, et al. 1977. Renal tubular dysfunction in Minamata disease. Detection of renal tubular antigen and beta-2-microglobulin in the urine. *Ann Intern Med* 86(6):731-737. <https://doi.org/10.7326/0003-4819-86-6-731>.
- Igata A. 1993. Epidemiological and clinical features of Minamata disease. *Environ Res* 63(1):157-169.
- Iglesias P, Carrero JJ, Díez JJ. 2012. Gonadal dysfunction in men with chronic kidney disease: Clinical features, prognostic implications and therapeutic options. *J Nephrol* 25(1):31-42. <https://doi.org/10.5301/jn.2011.8481>.
- IJC. 2015. Atmospheric deposition of mercury in the Great Lakes basin. Washington, DC: International Joint Commission: Canada and United States. <https://legacyfiles.ijc.org/tinymce/uploaded/documents/Atmospheric-Deposition-of-Mercury-in-the-Great-Lakes-Basin-December-2015.pdf>. December 14, 2020.
- Ikegaya K, Nokihara K, Yasuhara T. 2010. Characterization of sulfhydryl heterogeneity in human serum albumin and recombinant human serum albumin for clinical use. *Biosci Biotechnol Biochem* 74(11):2232-2236. <https://doi.org/10.1271/bbb.100423>.
- Ilback NG. 1991. Effects of methyl mercury exposure on spleen and blood natural killer (NK) cell activity in the mouse. *Toxicology* 67(1):117-124. [https://doi.org/10.1016/0300-483x\(91\)90169-2](https://doi.org/10.1016/0300-483x(91)90169-2).
- Ilback NG, Sundberg J, Oskarsson A. 1991. Methyl mercury exposure via placenta and milk impairs natural killer (NK) cell function in newborn rats. *Toxicol Lett* 58(2):149-158. [https://doi.org/10.1016/0378-4274\(91\)90169-7](https://doi.org/10.1016/0378-4274(91)90169-7).
- Ilback N-G, Frisk P, Tallkvist J, et al. 2008. Gastrointestinal uptake of trace elements are changed during the course of a common human viral (Coxsackievirus B3) infection in mice. *J Trace Elem Med Biol* 22(2):120-130. <https://doi.org/10.1016/j.jtemb.2007.12.001>.
- IMERC. 2015. IMERC fact sheet: Mercury use in batteries. Interstate Mercury Education and Reduction Clearinghouse.
- Inoue S, Yorifuji T, Tsuda T, et al. 2012. Short-term effect of severe exposure to methylmercury on atherosclerotic heart disease and hypertension mortality in Minamata. *Sci Total Environ* 417-418:291-293. <https://doi.org/10.1016/j.scitotenv.2011.11.076>.
- Inouye M, Kajiwara Y. 1988. Developmental disturbances of the fetal brain in guinea-pigs caused by methylmercury. *Arch Toxicol* 62(1):15-21. <https://doi.org/10.1007/BF00316251>.
- Inouye M, Murao K, Kajiwara Y. 1985. Behavioral and neuropathological effects of prenatal methylmercury exposure in mice. *Neurobehav Toxicol Teratol* 7(3):227-232.
- Inouye M, Kajiwara Y, Hirayama K. 1986. Dose- and sex-dependent alterations in mercury distribution in fetal mice following methylmercury exposure. *J Toxicol Environ Health* 19(3):425-435. <https://doi.org/10.1080/15287398609530940>.
- IRIS. 1987. Phenylmercuric acetate. CASRN 62-38-4. Integrated Risk Information System. Chemical assessment summary. Washington, DC: U.S. Environmental Protection Agency. https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0089_summary.pdf. November 10, 2020.
- IRIS. 1995a. Mercury, elemental. CASRN 7439-97-6. Integrated Risk Information System. Chemical assessment summary. Washington, DC: U.S. Environmental Protection Agency. https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0370_summary.pdf. November 10, 2020.
- IRIS. 1995b. Mercuric chloride (HgCl₂). CASRN 7487-94-7. Integrated Risk Information System. Chemical assessment summary. Washington, DC: U.S. Environmental Protection Agency. https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0692_summary.pdf. November 10, 2020.
- IRIS. 2001. Methylmercury (MeHg). CASRN 22967-92-6. Integrated Risk Information System. Chemical assessment summary. Washington, DC: U.S. Environmental Protection Agency. https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0073_summary.pdf. November 10, 2020.

8. REFERENCES

- Ishihara N. 2000. Excretion of methyl mercury in human feces. *Arch Environ Health* 55(1):44-47. <https://doi.org/10.1080/00039890009603384>.
- Ishihara Y, Itoh K, Oguro A, et al. 2019. Neuroprotective activation of astrocytes by methylmercury exposure in the inferior colliculus. *Sci Rep* 9(1):13899. <https://doi.org/10.1038/s41598-019-50377-9>.
- Ishitobi H, Stern S, Thurston SW, et al. 2010. Organic and inorganic mercury in neonatal rat brain after prenatal exposure to methylmercury and mercury vapor. *Environ Health Perspect* 118(2):242-248. <https://doi.org/10.1289/ehp.0900956>.
- Ismail OI, El-Meligy MMS. 2021. Could vitamin C protect against mercuric chloride induced lung toxicity in the offspring rat: A histological and immunohistochemical study. *Ultrastruct Pathol* 45(3):197-211. <https://doi.org/10.1080/01913123.2021.1954118>.
- Iverson F, Hierlihy SL. 1974. Biotransformation of methyl mercury in the guinea pig. *Bull Environ Contam Toxicol* 11(1):85-91.
- Iverson F, Downie RH, Paul C, et al. 1973. Methyl mercury: acute toxicity, tissue distribution and decay profiles in the guinea pig. *Toxicol Appl Pharmacol* 24(4):545-554.
- Iwai-Shimada M, Satoh H, Nakai K, et al. 2015. Methylmercury in the breast milk of Japanese mothers and lactational exposure of their infants. *Chemosphere* 126:67-72. <https://doi.org/10.1016/j.chemosphere.2014.12.086>.
- Iwata T, Sakamoto M, Feng X, et al. 2007. Effects of mercury vapor exposure on neuromotor function in Chinese miners and smelters. *Int Arch Occup Environ Health* 80(5):381-387. <https://doi.org/10.1007/s00420-006-0144-1>.
- Iwata T, Takaoka S, Sakamoto M, et al. 2016. Characteristics of hand tremor and postural sway in patients with fetal-type Minamata disease. *J Toxicol Sci* 41(6):757-763. <https://doi.org/10.2131/jts.41.757>.
- 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. <https://doi.org/10.1093/humrep/dem394>.
- Jackson LW, Howards PP, Wactawski-Wende J, et al. 2011. The association between cadmium, lead and mercury blood levels and reproductive hormones among healthy, premenopausal women. *Hum Reprod* 26(10):2887-2895. <https://doi.org/10.1093/humrep/der250>.
- Jacobson JL, Muckle G, Ayotte P, et al. 2015. Relation of prenatal methylmercury exposure from environmental sources to childhood IQ. *Environ Health Perspect* 123(8):827-833. <https://doi.org/10.1289/ehp.1408554>.
- Jagiello G, Lin JS. 1973. An assessment of the effects of mercury on the meiosis of mouse ova. *Mutat Res* 17(1):93-99. [https://doi.org/10.1016/0027-5107\(73\)90257-1](https://doi.org/10.1016/0027-5107(73)90257-1).
- Jain RB. 2017. Trends in and factors affecting the observed levels of urinary inorganic and total blood mercury among US children, adolescents, adults, and senior citizens over 2005-2012. *Environ Toxicol Pharmacol* 56:268-281. <https://doi.org/10.1016/j.etap.2017.09.003>.
- Jalili C, Kazemi M, Taheri E, et al. 2020a. Exposure to heavy metals and the risk of osteopenia or osteoporosis: a systematic review and meta-analysis. *Osteoporos Int* 31(9):1671-1682. <https://doi.org/10.1007/s00198-020-05429-6>.
- Jalili C, Akhshi N, Rashidi I, et al. 2020b. Harmine protects mercuric chloride kidney-induced injury by antioxidant activity in male mice: a biochemical and histological study. *Res Pharm Sci* 15(6):541-550. <https://doi.org/10.4103/1735-5362.301339>.
- Jan AT, Ali A, Haq Q. 2011. Glutathione as an antioxidant in inorganic mercury induced nephrotoxicity. *J Postgrad Med* 57(1):72-77. <https://doi.org/10.4103/0022-3859.74298>.
- Janse van Rensburg M, van Rooy MJ, Bester MJ, et al. 2020. Ultrastructural alterations of whole blood by copper, manganese and mercury metal mixtures using a chronic in vivo model of coagulation. *Environ Toxicol Pharmacol* 75:103314. <https://doi.org/10.1016/j.etap.2019.103314>.

8. REFERENCES

- Janssen SE, Riva-Murray K, DeWild JF, et al. 2019. Chemical and physical controls on mercury source signatures in stream fish from the northeastern United States. *Environ Sci Technol* 53(17):10110-10119. <https://doi.org/10.1021/acs.est.9b03394>.
- Jao-Tan C, Pope E. 2006. Cutaneous poisoning syndromes in children: A review. *Curr Opin Pediatr* 18(4):410-416. <https://doi.org/10.1097/01.mop.0000236391.49086.34>.
- Jarosinska D, Horvat M, Sallsten G, et al. 2008. Urinary mercury and biomarkers of early renal dysfunction in environmentally and occupationally exposed adults: a three-country study. *Environ Res* 108(2):224-232. <https://doi.org/10.1016/j.envres.2008.06.005>.
- Jedrychowski W, Jankowski J, Flak E, et al. 2006. Effects of prenatal exposure to mercury on cognitive and psychomotor function in one-year-old infants: epidemiologic cohort study in Poland. *Ann Epidemiol* 16(6):439-447. <https://doi.org/10.1016/j.annepidem.2005.06.059>.
- Jedrychowski W, Perera F, Jankowski J, et al. 2007. Fish consumption in pregnancy, cord blood mercury level and cognitive and psychomotor development of infants followed over the first three years of life: Krakow epidemiologic study. *Environ Int* 33(8):1057-1062. <https://doi.org/10.1016/j.envint.2007.06.001>.
- Jensen TK, Grandjean P, Jorgensen EB, et al. 2005. Effects of breast feeding on neuropsychological development in a community with methylmercury exposure from seafood. *J Expo Anal Environ Epidemiol* 15(5):423-430. <https://doi.org/10.1038/sj.jea.7500420>.
- Jenssen D, Ramel C. 1980. The micronucleus test as part of a short-term mutagenicity test program for the prediction of carcinogenicity evaluated by 143 agents tested. *Mutat Res* 75:191-202.
- Jenssen MT, Brantsaeter AL, Haugen M, et al. 2012. Dietary mercury exposure in a population with a wide range of fish consumption-self-capture of fish and regional differences are important determinants of mercury in blood. *Sci Total Environ* 439:220-229. <https://doi.org/10.1016/j.scitotenv.2012.09.024>.
- Jeon J, Morris JS, Park K. 2021. Toenail mercury levels positively correlate with obesity and abdominal obesity among Korean adults. *J Trace Elem Med Biol* 64:126678. <https://doi.org/10.1016/j.jtemb.2020.126678>.
- Jeong KS, Park H, Ha E, et al. 2017. High maternal blood mercury level is associated with low verbal IQ in children. *J Korean Med Sci* 32(7):1097-1104. <https://doi.org/10.3346/jkms.2017.32.7.1097>.
- Jeppesen C, Valera B, Nielsen NO, et al. 2015. Association between whole blood mercury and glucose intolerance among adult Inuit in Greenland. *Environ Res* 143(Pt A):192-197. <https://doi.org/10.1016/j.envres.2015.10.013>.
- Jin X, Chan HM, Lok E, et al. 2008. Dietary fats modulate methylmercury-mediated systemic oxidative stress and oxidative DNA damage in rats. *Food Chem Toxicol* 46(5):1706-1720. <https://doi.org/10.1016/j.fct.2008.01.015>.
- Jin R, Zhu X, Shrubsole MJ, et al. 2018. Associations of renal function with urinary excretion of metals: Evidence from NHANES 2003-2012. *Environ Int* 121(Pt 2):1355-1362. <https://doi.org/10.1016/j.envint.2018.11.002>.
- Jin T, Park EY, Kim B, et al. 2021. Association between blood mercury concentration and prevalence of borderline hypercholesterolemia among adolescents: The Korea National Health and Nutrition Examination Survey (KNHANES) 2010-2013 and 2016. *Toxics* 9(10):242. <https://doi.org/10.3390/toxics9100242>.
- Jindal M, Garg GR, Mediratta PK, et al. 2011. Protective role of melatonin in myocardial oxidative damage induced by mercury in murine model. *Hum Exp Toxicol* 30(10):1489-1500. <https://doi.org/10.1177/0960327110391685>.
- Jo S, Woo HD, Kwon HJ, et al. 2015. Estimation of the biological half-life of methylmercury using a population toxicokinetic model. *Int J Environ Res Public Health* 12(8):9054-9067. <https://doi.org/10.3390/ijerph120809054>.
- Johansson C, Castoldi AF, Onishchenko N, et al. 2007. Neurobehavioural and molecular changes induced by methylmercury exposure during development. *Neurotox Res* 11(3-4):241-260.

8. REFERENCES

- Johnson DL, Braman RS. 1974. Distribution of atmospheric mercury species near ground. *Environ Sci Technol* 8(12):1003-1009.
- Johnsson C, Schutz A, Sallsten G. 2005. Impact of consumption of freshwater fish on mercury levels in hair, blood, urine, and alveolar air. *J Toxicol Environ Health A* 68(2):129-140. <https://doi.org/10.1080/15287390590885992>.
- Jonker D, Woutersen RA, van Bladeren PJ, et al. 1993. Subacute (4-wk) oral toxicity of a combination of four nephrotoxins in rats: comparison with the toxicity of the individual compounds. *Food Chem Toxicol* 31(2):125-136. [https://doi.org/10.1016/0278-6915\(93\)90126-j](https://doi.org/10.1016/0278-6915(93)90126-j).
- Jonsson F, Sandborgh-Englund G, Johanson G. 1999. A compartmental model for the kinetics of mercury vapor in humans. *Toxicol Appl Pharmacol* 155(2):161-168. <https://doi.org/10.1006/taap.1998.8585>.
- Joo SH, Seo S, Cho MH, et al. 2022. Environmental exposure to lead, mercury, and cadmium is not associated with abnormal kidney function in Korean adolescents. *Pediatr Nephrol* 37(3):625-631. <https://doi.org/10.1007/s00467-021-05215-4>.
- Joselow MM, Ruiz R, Goldwater LJ. 1968. Absorption and excretion of mercury in man. XIV. Salivary excretion of mercury and its relationship to blood and urine mercury. *Arch Environ Health* 17(1):39-43.
- Joshi D, Kumar MD, Kumar SA, et al. 2014. Reversal of methylmercury-induced oxidative stress, lipid peroxidation, and DNA damage by the treatment of N-acetyl cysteine: a protective approach. *J Environ Pathol Toxicol Oncol* 33(2):167-182.
- Juárez BI, Portillo-Salazar H, Gonzalez-Amaro R, et al. 2005. Participation of N-methyl-D-aspartate receptors on methylmercury-induced DNA damage in rat frontal cortex. *Toxicology* 207(2):223-229. <https://doi.org/10.1016/j.tox.2004.09.007>.
- Julvez J, Debes F, Weihe P, et al. 2010. Sensitivity of continuous performance test (CPT) at age 14 years to developmental methylmercury exposure. *Neurotoxicol Teratol* 32(6):627-632. <https://doi.org/10.1016/j.ntt.2010.08.001>.
- Julvez J, Smith GD, Golding J, et al. 2013. Prenatal methylmercury exposure and genetic predisposition to cognitive deficit at age 8 years. *Epidemiology* 24(5):643-650. <https://doi.org/10.1097/EDE.0b013e31829d5c93>.
- Julvez J, Davey Smith G, Ring S, et al. 2019. A birth cohort study on the genetic modification of the association of prenatal methylmercury with child cognitive development. *Am J Epidemiol* 188(10):1784-1793. <https://doi.org/10.1093/aje/kwz156>.
- Julvez J, Lopez-Vicente M, Warembourg C, et al. 2021. Early life multiple exposures and child cognitive function: A multi-centric birth cohort study in six European countries. *Environ Pollut* 284:117404. <https://doi.org/10.1016/j.envpol.2021.117404>.
- Jung RC, Aaronson J. 1980. Death following inhalation of mercury vapor at home. *West J Med* 132(6):539-543.
- Jung SJ, Lee SH. 2019. Association between three heavy metals and dry eye disease in Korean adults: Results of the Korean National Health and Nutrition Examination Survey. *Korean J Ophthalmol* 33(1):26-35. <https://doi.org/10.3341/kjo.2018.0065>.
- Jung W, Kim Y, Lihm H, et al. 2019. Associations between blood lead, cadmium, and mercury levels with hyperuricemia in the Korean general population: A retrospective analysis of population-based nationally representative data. *Int J Rheum Dis* 22(8):1435-1444. <https://doi.org/10.1111/1756-185x.13632>.
- Juric AK, Batal M, David W, et al. 2017. A total diet study and probabilistic assessment risk assessment of dietary mercury exposure among First Nations living on-reserve in Ontario, Canada. *Environ Res* 158:409-420. <https://doi.org/10.1016/j.envres.2017.06.025>.
- Kagi JHR, Vasak M, Lerch K, et al. 1984. Structure of mammalian metallothionein. *Environ Health Perspect* 54:93. <https://doi.org/10.2307/3429795>.
- Kajiwara Y, Yasutake A, Adachi T, et al. 1996. Methylmercury transport across the placenta via neutral amino acid carrier. *Arch Toxicol* 70(5):310-314.

8. REFERENCES

- Kajiwara Y, Yasutake A, Hirayama K. 1997. Strain difference in methylmercury transport across the placenta. *Bull Environ Contam Toxicol* 59(5):783-787.
- Kakita A, Wakabayashi K, Su M, et al. 2000. Intrauterine methylmercury intoxication. Consequence of the inherent brain lesions and cognitive dysfunction in maturity. *Brain Res* 877(2):322-330. [https://doi.org/10.1016/s0006-8993\(00\)02717-7](https://doi.org/10.1016/s0006-8993(00)02717-7).
- Kalač P, Burda J, Stakova I. 1991. Concentrations of lead, cadmium, mercury and copper in mushrooms in the vicinity of a lead smelter. *Sci Total Environ* 105:109-119. [https://doi.org/10.1016/0048-9697\(91\)90333-a](https://doi.org/10.1016/0048-9697(91)90333-a).
- Kalish BT, Rifas-Shiman SL, Wright RO, et al. 2014. Associations of prenatal maternal blood mercury concentrations with early and mid-childhood blood pressure: a prospective study. *Environ Res* 133:327-333. <https://doi.org/10.1016/j.envres.2014.06.004>.
- Kamycheva E, Goto T, Camargo CA. 2017. Blood levels of lead and mercury and celiac disease seropositivity: the US National Health and Nutrition Examination Survey. *Environ Sci Pollut Res Int* 24(9):8385-8391. <https://doi.org/10.1007/s11356-017-8545-0>.
- Kanematsu N, Hara M, Kada T. 1980. Rec assay and mutagenicity studies on metal compounds. *Mutat Res* 77:109-116.
- Kang MS, Jeong JY, Seo JH, et al. 2006. Methylmercury-induced toxicity is mediated by enhanced intracellular calcium through activation of phosphatidylcholine-specific phospholipase C. *Toxicol Appl Pharmacol* 216(2):206-215. <https://doi.org/10.1016/j.taap.2006.04.016>.
- Kang P, Shin HY, Kim KY. 2021. Association between dyslipidemia and mercury exposure in adults. *Int J Environ Res Public Health* 18(2):775. <https://doi.org/10.3390/ijerph18020775>.
- Kanluen S, Gottlieb CA. 1991. A clinical pathologic study of four adult cases of acute mercury inhalation toxicity. *Arch Pathol Lab Med* 115(1):56-60.
- Karatela S, Ward N, Paterson J. 2019. Mercury exposure in mother-children pairs in a seafood eating population: Body burden and related factors. *Int J Environ Res Public Health* 16(12):2238. <https://doi.org/10.3390/ijerph16122238>.
- Karita K, Iwata T, Maeda E, et al. 2018. Assessment of cardiac autonomic function in relation to methylmercury neurotoxicity. *Toxics* 6:38. <https://doi.org/10.3390/toxics6030038>.
- Kawahara D, Oshima H, Kosugi H, et al. 1993. Further epidemiologic study of occupational contact dermatitis in the dental clinic. *Contact Dermatitis* 28(2):114-115. <https://doi.org/10.1111/j.1600-0536.1993.tb03357.x>.
- Kawasaki Y, Ikeda Y, Yamamoto T, et al. 1986. Long-term toxicity study of methylmercury chloride in monkeys. *J Food Hyg Soc Jpn* 27(5):528-552.
- Ke T, Gonçalves FM, Gonçalves CL, et al. 2019. Post-translational modifications in MeHg-induced neurotoxicity. *Biochim Biophys Acta Mol Basis Dis* 1865(8):2068-2081. <https://doi.org/10.1016/j.bbadis.2018.10.024>.
- Keeler GJ, Hoyner ME, Lamborg CH. 1994. Measurements of atmospheric mercury in the Great Lakes basin. In: Watras CJ, Huckabee JW, eds. *Mercury pollution integration and synthesis*. Boca Raton, FL: Lewis Publishers, 231-241.
- Kelly TJ, Czuczwa JM, Sticksel PR, et al. 1991. Atmospheric and tributary inputs of toxic substances to Lake Erie. *J Great Lakes Res* 17(4):504-516. [https://doi.org/10.1016/s0380-1330\(91\)71386-5](https://doi.org/10.1016/s0380-1330(91)71386-5).
- Kendricks DR, Newland MC. 2021. Selective dopaminergic effects on attention and memory in male mice exposed to Methylmercury during adolescence. *Neurotoxicol Teratol* 87:107016. <https://doi.org/10.1016/j.ntt.2021.107016>.
- Kendricks DR, Boomhower SR, Newland MC. 2020a. Methylmercury, attention, and memory: baseline-dependent effects of adult d-amphetamine and marginal effects of adolescent methylmercury. *Neurotoxicology* 80:130-139. <https://doi.org/10.1016/j.neuro.2020.07.009>.
- Kendricks DR, Boomhower SR, Arnold MA, et al. 2020b. Adolescent methylmercury exposure alters short-term remembering, but not sustained attention, in male Long-Evans rats. *Neurotoxicology* 78:186-194. <https://doi.org/10.1016/j.neuro.2020.03.009>.

8. REFERENCES

- Kendricks DR, Bhattacharya S, Reed MN, et al. 2022. Impacts of neonatal methylmercury on behavioral flexibility and learning in spatial discrimination reversal and visual signal detection tasks. *Neurotoxicology* 93:9-21. <https://doi.org/10.1016/j.neuro.2022.08.013>.
- Kern JK, Geier DA, Homme KG, et al. 2020. Examining the evidence that ethylmercury crosses the blood-brain barrier. *Environ Toxicol Pharmacol* 74:103312. <https://doi.org/10.1016/j.etap.2019.103312>.
- Kerper LE, Ballatori N, Clarkson TW. 1992. Methylmercury transport across the blood-brain barrier by an amino acid carrier. *Am J Physiol* 262(5 Pt 2):R761-765. <https://doi.org/10.1152/ajpregu.1992.262.5.R761>.
- Kerry A, Welbourn PM, Prucha B, et al. 1991. Mercury methylation by sulphate-reducing bacteria from sediments of an acid stressed lake. *Water Air Soil Pollut* 56(1):565-575. <https://doi.org/10.1007/bf00342300>.
- Kershaw TG, Clarkson TW, Dhahir PH. 1980. The relationship between blood levels and dose of methylmercury in man. *Arch Environ Health* 35(1):28-36.
- Khan MA, Wang F. 2009. Mercury-selenium compounds and their toxicological significance: Toward a molecular understanding of the mercury-selenium antagonism. *Environ Toxicol Chem* 28(8):1567-1577. <https://doi.org/10.1897/08-375.1>.
- Khan MF, Wang H. 2020. Environmental exposures and autoimmune diseases: contribution of gut microbiome. *Front Immunol* 10:3094. <https://doi.org/10.3389/fimmu.2019.03094>.
- Khan AT, Atkinson A, Graham TC, et al. 2001. Uptake and distribution of mercury in rats after repeated administration of mercuric chloride. *J Environ Sci Health A Tox Hazard Subst Environ Eng* 36(10):2039-2045.
- Khan AT, Atkinson A, Graham TC, et al. 2004. Effects of inorganic mercury on reproductive performance of mice. *Food Chem Toxicol* 42(4):571-577. <https://doi.org/10.1016/j.fct.2003.10.018>.
- Khayat A, Dencker L. 1983. Whole body and liver distribution of inhaled mercury vapor in the mouse: Influence of ethanol and aminotriazole pretreatment. *J Appl Toxicol* 3(2):66-74. <https://doi.org/10.1002/jat.2550030203>.
- Khayat A, Dencker L. 1984. Organ and cellular distribution of inhaled metallic mercury in the rat and marmoset monkey (*Callithrix jacchus*): Influence of ethyl alcohol pretreatment. *Acta Pharmacol Toxicol* 55(2):145-152. <https://doi.org/10.1111/j.1600-0773.1984.tb01977.x>.
- Khera KS. 1973. Reproductive capability of male rats and mice treated with methyl mercury. *Toxicol Appl Pharmacol* 24:167-177. [https://doi.org/10.1016/0041-008x\(73\)90136-1](https://doi.org/10.1016/0041-008x(73)90136-1).
- Khera KS, Tabacova SA. 1973. Effects of methylmercuric chloride on the progeny of mice and rats treated before or during gestation. *Food Cosmet Toxicol* 11(2):245-254. [https://doi.org/10.1016/s0015-6264\(73\)80491-2](https://doi.org/10.1016/s0015-6264(73)80491-2).
- Khera KS, Iverson F, Hierlihy L, et al. 1974. Toxicity of methylmercury in neonatal cats. *Teratology* 10(1):69-76. <https://doi.org/10.1002/tera.1420100110>.
- Khoury ED, Souza Gda S, da Costa CA, et al. 2015. Somatosensory psychophysical losses in inhabitants of riverside communities of the Tapajos River Basin, Amazon, Brazil: Exposure to methylmercury is possibly involved. *PLoS ONE* 10(12):e0144625. <https://doi.org/10.1371/journal.pone.0144625>.
- Kim Y, Lee BK. 2012. Associations of blood lead, cadmium, and mercury with estimated glomerular filtration rate in the Korean general population: Analysis of 2008-2010 Korean National Health and Nutrition Examination Survey data. *Environ Res* 118:124-129. <https://doi.org/10.1016/j.envres.2012.06.003>.
- Kim K, Park H. 2023. Association of mercury exposure with the serum high-sensitivity C-reactive protein level in Korean adults. *Front Public Health* 11:1062741. <https://doi.org/10.3389/fpubh.2023.1062741>.
- Kim CY, Nakai K, Kasanuma Y, et al. 2000. Comparison of neurobehavioral changes in three inbred strains of mice prenatally exposed to methylmercury. *Neurotoxicol Teratol* 22(3):397-403. [https://doi.org/10.1016/s0892-0362\(99\)00077-x](https://doi.org/10.1016/s0892-0362(99)00077-x).

8. REFERENCES

- Kim SH, Johnson VJ, Sharma RP. 2003. Oral exposure to inorganic mercury alters T lymphocyte phenotypes and cytokine expression in BALB/c mice. *Arch Toxicol* 77(11):613-620. <https://doi.org/10.1007/s00204-003-0497-0>.
- Kim BM, Lee BE, Hong YC, et al. 2011. Mercury levels in maternal and cord blood and attained weight through the 24 months of life. *Sci Total Environ* 410-411:26-33. <https://doi.org/10.1016/j.scitotenv.2011.08.060>.
- Kim RB, Kim BG, Kim YM, et al. 2013a. Association between low-level mercury exposure and neurobehavioral functions in Korean adults living in a coastal city. *Environ Health Toxicol* 28:e2013015. <https://doi.org/10.5620/eht.2013.28.e2013015>.
- Kim H, Kim KN, Hwang JY, et al. 2013b. Relation between serum folate status and blood mercury concentrations in pregnant women. *Nutrition* 29(3):514-518. <https://doi.org/10.1016/j.nut.2012.08.012>.
- Kim YN, Kim YA, Yang AR, et al. 2014. Relationship between blood mercury level and risk of cardiovascular diseases: Results from the fourth Korea National Health and Nutrition Examination Survey (KNHANES IV) 2008-2009. *Prev Nutr Food Sci* 19(4):333-342. <https://doi.org/10.3746/pnf.2014.19.4.333>.
- Kim KN, Bae S, Park HY, et al. 2015a. Low-level mercury exposure and risk of asthma in school-age children. *Epidemiology* 26(5):733-739. <https://doi.org/10.1097/ede.0000000000000351>.
- Kim NH, Hyun YY, Lee KB, et al. 2015b. Environmental heavy metal exposure and chronic kidney disease in the general population. *J Korean Med Sci* 30(3):272-277. <https://doi.org/10.3346/jkms.2015.30.3.272>.
- Kim KN, Park SJ, Choi B, et al. 2015c. Blood mercury and insulin resistance in nondiabetic Koreans (KNHANES 2008-2010). *Yonsei Med J* 56(4):944-950. <https://doi.org/10.3349/ymj.2015.56.4.944>.
- Kim JH, Lee KH, Hong SC, et al. 2015d. Association between serum mercury concentration and leukocyte differential count in children. *Pediatr Hematol Oncol* 32(2):109-114. <https://doi.org/10.3109/08880018.2013.853222>.
- Kim YH, Shim JY, Seo MS, et al. 2016a. Relationship between blood mercury concentration and bone mineral density in Korean men in the 2008-2010 Korean National Health and Nutrition Examination Survey. *Korean J Fam Med* 37(5):273-278. <https://doi.org/10.4082/kjfm.2016.37.5.273>.
- Kim SA, Kwon Y, Kim S, et al. 2016b. Assessment of dietary mercury intake and blood mercury levels in the Korean population: Results from the Korean National Environmental Health Survey 2012-2014. *Int J Environ Res Public Health* 13(9):13090877. <https://doi.org/10.3390/ijerph13090877>.
- Kim BM, Chen MH, Chen PC, et al. 2017. Path analysis of prenatal mercury levels and birth weights in Korean and Taiwanese birth cohorts. *Sci Total Environ* 605-606:1003-1010. <https://doi.org/10.1016/j.scitotenv.2017.06.151>.
- Kim Y, Ha EH, Park H, et al. 2018. Prenatal mercury exposure, fish intake and neurocognitive development during first three years of life: Prospective cohort mothers and Children's environmental health (MOCEH) study. *Sci Total Environ* 615:1192-1198. <https://doi.org/10.1016/j.scitotenv.2017.10.014>.
- Kim B, Shah S, Park HS, et al. 2020a. Adverse effects of prenatal mercury exposure on neurodevelopment during the first 3 years of life modified by early growth velocity and prenatal maternal folate level. *Environ Res* 191:109909. <https://doi.org/10.1016/j.envres.2020.109909>.
- Kim KW, Sreeja SR, Kwon M, et al. 2020b. Association of blood mercury level with the risk of depression according to fish intake level in the general Korean population: Findings from the Korean National Health and Nutrition Examination Survey (KNHANES) 2008-2013. *Nutrients* 12(1):189. <https://doi.org/10.3390/nu12010189>.
- Kim SS, Meeker JD, Aung MT, et al. 2020c. Urinary trace metals in association with fetal ultrasound measures during pregnancy. *Environ Epidemiol* 4(2):e075. <https://doi.org/10.1097/ee9.0000000000000075>.

8. REFERENCES

- Kim DW, Ock J, Moon KW, et al. 2021a. Association between Pb, Cd, and Hg exposure and liver injury among Korean adults. *Int J Environ Res Public Health* 18(13):6783. <https://doi.org/10.3390/ijerph18136783>.
- Kim MJ, Kim S, Choi S, et al. 2021b. Association of exposure to polycyclic aromatic hydrocarbons and heavy metals with thyroid hormones in general adult population and potential mechanisms. *Sci Total Environ* 762:144227. <https://doi.org/10.1016/j.scitotenv.2020.144227>.
- Kim DW, Ock J, Moon KW, et al. 2022a. Association between heavy metal exposure and dyslipidemia among Korean adults: From the Korean National Environmental Health Survey, 2015-2017. *Int J Environ Res Public Health* 19(6):3181. <https://doi.org/10.3390/ijerph19063181>.
- Kim K, Argos M, Persky VW, et al. 2022b. Associations of exposure to metal and metal mixtures with thyroid hormones: Results from the NHANES 2007-2012. *Environ Res* 212(Pt C):113413. <https://doi.org/10.1016/j.envres.2022.113413>.
- King G. 1954. Acute pneumonitis due to accidental exposure to mercury vapor. *Ariz Med* 11:335.
- Kirk JL, Lehnher I, Andersson M, et al. 2012. Mercury in Arctic marine ecosystems: sources, pathways and exposure. *Environ Res* 119:64-87. <https://doi.org/10.1016/j.envres.2012.08.012>.
- Kirkpatrick M, Benoit J, Everett W, et al. 2015. The effects of methylmercury exposure on behavior and biomarkers of oxidative stress in adult mice. *Neurotoxicology* 50:170-178. <https://doi.org/10.1016/j.neuro.2015.07.001>.
- Kishi R, Hashimoto K, Shimizu S, et al. 1978. Behavioral changes and mercury concentrations in tissues of rats exposed to mercury vapor. *Toxicol Appl Pharmacol* 46(3):555-566. [https://doi.org/10.1016/0041-008x\(78\)90303-4](https://doi.org/10.1016/0041-008x(78)90303-4).
- Kjellstrom T, Kennedy P, Wallis S, et al. 1986. Physical and mental development of children with prenatal exposure to mercury from fish. Stage I: Preliminary tests at age 4. Solna, Sweden: National Swedish Environmental Board. Report 3080.
- Kjellstrom T, Kennedy P, Wallis S, et al. 1989. Physical and mental development of children with prenatal exposure to mercury from fish. Stage 2: Interviews and psychological tests at age 6. Solna, Sweden: National Swedish Environmental Protection Board. Report 3642.
- Kobal AB, Horvat M, Prezelj M, et al. 2004. The impact of long-term past exposure to elemental mercury on antioxidative capacity and lipid peroxidation in mercury miners. *J Trace Elem Med Biol* 17(4):261-274. [https://doi.org/10.1016/s0946-672x\(04\)80028-2](https://doi.org/10.1016/s0946-672x(04)80028-2).
- Kobayashi S, Kishi R, Saijo Y, et al. 2019. Association of blood mercury levels during pregnancy with infant birth size by blood selenium levels in the Japan Environment and Children's Study: A prospective birth cohort. *Environ Int* 125:418-429. <https://doi.org/10.1016/j.envint.2019.01.051>.
- Kobayashi S, Itoh S, Miyashita C, et al. 2022. Impact of prenatal exposure to mercury and selenium on neurodevelopmental delay in children in the Japan environment and Children's study using the ASQ-3 questionnaire: A prospective birth cohort. *Environ Int* 168:107448. <https://doi.org/10.1016/j.envint.2022.107448>.
- Koch P, Bahmer FA. 1999. Oral lesions and symptoms related to metals used in dental restorations: a clinical, allergological, and histologic study. *J Am Acad Dermatol* 41(3 Pt 1):422-430. [https://doi.org/10.1016/s0190-9622\(99\)70116-7](https://doi.org/10.1016/s0190-9622(99)70116-7).
- Koh AS, Simmons-Willis TA, Pritchard JB, et al. 2002. Identification of a mechanism by which the methylmercury antidotes N-acetylcysteine and dimercaptopropanesulfonate enhance urinary metal excretion: transport by the renal organic anion transporter-1. *Mol Pharmacol* 62(4):921-926.
- Kohler CC, Heidinger RC, Call T. 1990. Levels of PCBs and trace metals in crab orchard lake sediment, benthos, zooplankton and fish. Carbondale, IL: University of South Illinois. HWRICRR-043.
- Koller LD, Exon JH, Arbogast B. 1977. Methylmercury: Effect on serum enzymes and humoral antibody. *J Toxicol Environ Health* 2(5):1115-1123. <https://doi.org/10.1080/15287397709529509>.
- Komsta-Szumaska E, Chmielnicka J, Piotrowski JK. 1976. Binding of inorganic mercury by subcellular fractions and proteins of rat kidneys. *Arch Toxicol* 37(1):57-66. <https://doi.org/10.1007/bf00353355>.

8. REFERENCES

- Koopsamy Naidoo SV, Bester MJ, Arbi S, et al. 2019. Oral exposure to cadmium and mercury alone and in combination causes damage to the lung tissue of Sprague-Dawley rats. *Environ Toxicol Pharmacol* 69:86-94. <https://doi.org/10.1016/j.etap.2019.03.021>.
- Kopec AD, Kidd KA, Fisher NS, et al. 2019. Spatial and temporal trends of mercury in the aquatic food web of the lower Penobscot River, Maine, USA, affected by a chlor-alkali plant. *Sci Total Environ* 649:770-791. <https://doi.org/10.1016/j.scitotenv.2018.08.203>.
- Kort SAR, Wickliffe J, Shankar A, et al. 2022. The association between mercury and lead exposure and liver and kidney function in pregnant Surinamese women enrolled in the Caribbean Consortium for Research in Environmental and Occupational Health (CCREOH) environmental epidemiologic cohort study. *Toxics* 10(10):584. <https://doi.org/10.3390/toxics10100584>.
- Kosta L, Byrne AR, Zelenko V. 1975. Correlation between selenium and mercury in man following exposure to inorganic mercury. *Nature* 254(5497):238-239. <https://doi.org/10.1038/254238a0>.
- Kostial K, Kargačič B, Landeka M. 1984. Influence of dietary ingredients on the body retention of strontium, cadmium and mercury in suckling rats. *Toxicol Lett* 23(2):163-168. [https://doi.org/10.1016/0378-4274\(84\)90121-8](https://doi.org/10.1016/0378-4274(84)90121-8).
- Kostial K, Kello D, Jugo S, et al. 1978. Influence of age on metal metabolism and toxicity. *Environ Health Perspect* 25:81-86. <https://doi.org/10.1289/ehp.782581>.
- Kostial K, Restek-Samarzija N, Blanus M, et al. 1997. Racemic-2,3-dimercaptosuccinic acid for inorganic mercury mobilization in rats. *J Appl Toxicol* 17(1):71-74.
- Kostyniak PJ. 1983. Pharmacokinetics of methylmercury in sheep. *J Appl Toxicol* 3(1):35-38.
- Krabbenhoft DP, Babiarcz CL. 1992. The role of groundwater transport in aquatic mercury cycling. *Water Resour Res* 28(12):3119-3128. <https://doi.org/10.1029/92wr01766>.
- Krystek P, Favaro P, Bode P, et al. 2012. Methyl mercury in nail clippings in relation to fish consumption analysis with gas chromatography coupled to inductively coupled plasma mass spectrometry: a first orientation. *Talanta* 97:83-86. <https://doi.org/10.1016/j.talanta.2012.03.065>.
- Kvestad I, Vabø S, Kjelleve M, et al. 2018. Fatty fish, hair mercury and cognitive function in Norwegian preschool children: Results from the randomized controlled trial FINS-KIDS. *Environ Int* 121(Pt 2):1098-1105. <https://doi.org/10.1016/j.envint.2018.10.022>.
- Laine J, Kalimo K, Happonen RP. 1997. Contact allergy to dental restorative materials in patients with oral lichenoid lesions. *Contact Dermatitis* 36(3):141-146. <https://doi.org/10.1111/j.1600-0536.1997.tb00396.x>.
- Lam HS, Kwok KM, Chan PH, et al. 2013. Long term neurocognitive impact of low dose prenatal methylmercury exposure in Hong Kong. *Environ Int* 54:59-64. <https://doi.org/10.1016/j.envint.2013.01.005>.
- Langolf GD, Chaffin DB, Henderson R, et al. 1978. Evaluation of workers exposed to elemental mercury using quantitative tests of tremor and neuromuscular functions. *Am Ind Hyg Assoc J* 39(12):976-984. <https://doi.org/10.1080/0002889778507898>.
- Langworth S, Kölbeck KG, Akesson A. 1988. Mercury exposure from dental fillings. II. Release and absorption. *Swed Dent J* 12(1-2):71-72.
- Langworth S, Almkvist O, Soderman E, et al. 1992a. Effects of occupational exposure to mercury vapour on the central nervous system. *Occup Environ Med* 49(8):545-555. <https://doi.org/10.1136/oem.49.8.545>.
- Langworth S, Elinder CG, Sundquist KG, et al. 1992b. Renal and immunological effects of occupational exposure to inorganic mercury. *Br J Ind Med* 49(6):394-401. <https://doi.org/10.1136/oem.49.6.394>.
- Larsen JO, Brændgaard H. 1995. Structural preservation of cerebellar granule cells following neurointoxication with methyl mercury: A stereological study of the rat cerebellum. *Acta Neuropathol* 90:251-256. <https://doi.org/10.1007/BF00296508>.
- Larsen TJ, Jørgensen ME, Larsen CVL, et al. 2018. Whole blood mercury and the risk of cardiovascular disease among the Greenlandic population. *Environ Res* 164:310-315. <https://doi.org/10.1016/j.envres.2018.03.003>.

8. REFERENCES

- Lash LH, Jones DP. 1985. Uptake of the glutathione conjugate S-(1,2-dichlorovinyl)glutathione by renal basal-lateral membrane vesicles and isolated kidney cells. *Mol Pharmacol* 28(3):278-282.
- Laue HE, Moroishi Y, Jackson BP, et al. 2020. Nutrient-toxic element mixtures and the early postnatal gut microbiome in a United States longitudinal birth cohort. *Environ Int* 138:105613. <https://doi.org/10.1016/j.envint.2020.105613>.
- Lauwerys R, Bonnier C, Evrard P, et al. 1987. Prenatal and early postnatal intoxication by inorganic mercury resulting from the maternal use of mercury containing soap. *Hum Toxicol* 6(3):253-256. <https://doi.org/10.1177/096032718700600316>.
- Lebel J, Mergler D, Lucotte M, et al. 1996. Evidence of early nervous system dysfunction in Amazonian populations exposed to low-levels of methylmercury. *Neurotoxicology* 17(1):157-167.
- Lebel J, Mergler D, Branches F, et al. 1998. Neurotoxic effects of low-level methylmercury contamination in the Amazonian Basin. *Environ Res* 79(1):20-32.
- Lecavalier PR, Chu I, Villeneuve D, et al. 1994. Combined effects of mercury and hexachlorobenzene in the rat. *J Environ Sci Health B* 29(5):951-961. <https://doi.org/10.1080/03601239409372911>.
- Lederman SA, Jones RL, Caldwell KL, et al. 2008. Relation between cord blood mercury levels and early child development in a World Trade Center cohort. *Environ Health Perspect* 116(8):1085-1091. <https://doi.org/10.1289/ehp.10831>.
- Lee Y, Iverfeldt A. 1991. Measurement of methylmercury and mercury in run-off, lake and rain waters. *Water Air Soil Pollut* 56(1):309-321. <https://doi.org/10.1007/bf00342279>.
- Lee JH, Han DH. 1995. Maternal and fetal toxicity of methylmercuric chloride administered to pregnant Fischer 344 rats. *J Toxicol Environ Health* 45(4):415-425. <https://doi.org/10.1080/15287399509532005>.
- Lee E, Park HK, Kim HJ. 1996. Adjustment of urinary mercury in health risk assessment of mercury. *J Korean Med Sci* 11(4):319-325. <https://doi.org/10.3346/jkms.1996.11.4.319>.
- Lee CH, Lin RH, Liu SH, et al. 1997. Distinct genotoxicity of phenylmercury acetate in human lymphocytes as compared with other mercury compounds. *Mutat Res* 392(3):269-276.
- Lee BE, Hong YC, Park H, et al. 2010. Interaction between GSTM1/GSTT1 polymorphism and blood mercury on birth weight. *Environ Health Perspect* 118(3):437-443. <https://doi.org/10.1289/ehp.0900731>.
- Lee H, Kim Y, Sim CS, et al. 2014. Associations between blood mercury levels and subclinical changes in liver enzymes among South Korean general adults: analysis of 2008-2012 Korean national health and nutrition examination survey data. *Environ Res* 130:14-19. <https://doi.org/10.1016/j.envres.2014.01.005>.
- Lee S, Yoon JH, Won JU, et al. 2016. The association between blood mercury levels and risk for overweight in a general adult population: Results from the Korean National Health and Nutrition Examination Survey. *Biol Trace Elem Res* 171(2):251-261. <https://doi.org/10.1007/s12011-015-0530-1>.
- Lee MR, Lim YH, Lee BE, et al. 2017a. Blood mercury concentrations are associated with decline in liver function in an elderly population: a panel study. *Environ Health* 16(1):17. <https://doi.org/10.1186/s12940-017-0228-2>.
- Lee S, Tan YM, Phillips MB, et al. 2017b. Estimating methylmercury intake for the general population of South Korea using physiologically based pharmacokinetic modeling. *Toxicol Sci* 159(1):6-15. <https://doi.org/10.1093/toxsci/kfx111>.
- Lee DH, Keum N, Hu FB, et al. 2017c. Development and validation of anthropometric prediction equations for lean body mass, fat mass and percent fat in adults using the National Health and Nutrition Examination Survey (NHANES) 1999–2006. *Br J Nutr* 118(10):858-866. <https://doi.org/10.1017/s0007114517002665>.
- Lee SH, Choi B, Park SJ, et al. 2017d. The cut-off value of blood mercury concentration in relation to insulin resistance. *J Obes Metab Syndr* 26(3):197-203. <https://doi.org/10.7570/jomes.2017.26.3.197>.

8. REFERENCES

- Lee TW, Kim DH, Ryu JY. 2019. The effects of exposure to lead, cadmium and mercury on follicle-stimulating hormone levels in men and postmenopausal women: data from the Second Korean National Environmental Health Survey (2012-2014). *Ann Occup Environ Med* 31:e21. <https://doi.org/10.35371/aoem.2019.31.e21>.
- Lee S, Cho SR, Jeong I, et al. 2020a. Mercury exposure and associations with hyperlipidemia and elevated liver enzymes: A nationwide cross-sectional survey. *Toxics* 8(3):47. <https://doi.org/10.3390/toxics8030047>.
- Lee S, Hong YC, Park H, et al. 2020b. Combined effects of multiple prenatal exposure to pollutants on birth weight: The Mothers and Children's Environmental Health (MOCEH) study. *Environ Res* 181:108832. <https://doi.org/10.1016/j.envres.2019.108832>.
- Leggett RW, Munro NB, Eckerman KF. 2001. Proposed revision of the ICRP model for inhaled mercury vapor. *Health Phys* 81(4):450-455.
- Leistevuo J, Leistevuo T, Helenius H, et al. 2001. Dental amalgam fillings and the amount of organic mercury in human saliva. *Caries Res* 35(3):163-166. <https://doi.org/10.1159/000047450>.
- Leong CC, Syed NI, Lorscheider FL. 2001. Retrograde degeneration of neurite membrane structural integrity of nerve growth cones following in vitro exposure to mercury. *Neuroreport* 12(4):733-737.
- Lescord GL, Johnston TA, Branfireun BA, et al. 2018. Percentage of methylmercury in the muscle tissue of freshwater fish varies with body size and age and among species. *Environ Toxicol Chem* 37(10):2682-2691. <https://doi.org/10.1002/etc.4233>.
- Letz R, Gerr F, Cragle D, et al. 2000. Residual neurologic deficits 30 years after occupational exposure to elemental mercury. *Neurotoxicology* 21(4):459-474.
- Leung TY, Choy CM, Yim SF, et al. 2001. Whole blood mercury concentrations in sub-fertile men in Hong Kong. *Aust N Z J Obstet Gynaecol* 41(1):75-77. <https://doi.org/10.1111/j.1479-828x.2001.tb01298.x>.
- Levey AS, Stevens LA, Schmid CH, et al. 2009. A new equation to estimate glomerular filtration rate. *Ann Intern Med* 150(9):604. <https://doi.org/10.7326/0003-4819-150-9-200905050-00006>.
- Levine SP, Cavender GD, Langolf GD, et al. 1982. Elemental mercury exposure: Peripheral neurotoxicity. *Occup Environ Med* 39(2):136-139. <https://doi.org/10.1136/oem.39.2.136>.
- Lewis RJ. 1993. Mercury. In: *Hawley's condensed chemical dictionary*. 12th ed. New York, NY: John Wiley & Sons, Inc., 739-741, 743-745, 901.
- Li W, Wang WX. 2019. In vivo oral bioavailability of fish mercury and comparison with in vitro bioaccessibility. *Sci Total Environ* 683:648-658. <https://doi.org/10.1016/j.scitotenv.2019.05.290>.
- Li Y, Zhang B, Yang L, et al. 2013. Blood mercury concentration among residents of a historic mercury mine and possible effects on renal function: a cross-sectional study in southwestern China. *Environ Monit Assess* 185(4):3049-3055. <https://doi.org/10.1007/s10661-012-2772-0>.
- Li P, Du B, Chan HM, et al. 2015. Human inorganic mercury exposure, renal effects and possible pathways in Wanshan mercury mining area, China. *Environ Res* 140:198-204. <https://doi.org/10.1016/j.envres.2015.03.033>.
- Li S, Baiyun R, Lv Z, et al. 2019a. Exploring the kidney hazard of exposure to mercuric chloride in mice: Disorder of mitochondrial dynamics induces oxidative stress and results in apoptosis. *Chemosphere* 234:822-829. <https://doi.org/10.1016/j.chemosphere.2019.06.096>.
- Li H, Lin X, Zhao J, et al. 2019b. Intestinal methylation and demethylation of mercury. *Bull Environ Contam Toxicol* 102(5):597-604. <https://doi.org/10.1007/s00128-018-2512-4>.
- Li P, Yin R, Du B, et al. 2020. Kinetics and metabolism of mercury in rats fed with mercury contaminated rice using mass balance and mercury isotope approach. *Sci Total Environ* 736:139687. <https://doi.org/10.1016/j.scitotenv.2020.139687>.
- Li W, Li X, Su J, et al. 2023. Associations of blood metals with liver function: Analysis of NHANES from 2011 to 2018. *Chemosphere* 317:137854. <https://doi.org/10.1016/j.chemosphere.2023.137854>.
- Liang JH, Pu YQ, Liu ML, et al. 2023. Joint effect of whole blood metals exposure with dyslipidemia in representative US adults in NHANES 2011-2020. *Environ Sci Pollut Res Int* 30(42):96604-96616. <https://doi.org/10.1007/s11356-023-28903-0>.

8. REFERENCES

- Liberda EN, Tsuji LJ, Martin ID, et al. 2014. The complexity of hair/blood mercury concentration ratios and its implications. *Environ Res* 134:286-294. <https://doi.org/10.1016/j.envres.2014.08.007>.
- Lilis R, Miller A, Lerman Y. 1985. Acute mercury poisoning with severe chronic pulmonary manifestations. *Chest* 88(2):306-309. <https://doi.org/10.1378/chest.88.2.306>.
- Lim HS, Lee HH, Kim TH, et al. 2016. Relationship between heavy metal exposure and bone mineral density in Korean adult. *J Bone Metab* 23(4):223-231. <https://doi.org/10.11005/jbm.2016.23.4.223>.
- Lin YS, Ginsberg G, Caffrey JL, et al. 2014a. Association of body burden of mercury with liver function test status in the U.S. population. *Environ Int* 70:88-94. <https://doi.org/10.1016/j.envint.2014.05.010>.
- Lin YS, Ginsberg G, Lin JW, et al. 2014b. Mercury exposure and omega-3 fatty acid intake in relation to renal function in the US population. *Int J Hyg Environ Health* 217(4-5):465-472. <https://doi.org/10.1016/j.ijheh.2013.09.004>.
- Lin PD, Cardenas A, Rifas-Shiman SL, et al. 2023. Non-essential and essential trace element mixtures and kidney function in early pregnancy - A cross-sectional analysis in project viva. *Environ Res* 216(Pt 4):114846. <https://doi.org/10.1016/j.envres.2022.114846>.
- Lindberg SE, Turner RR, Meyers TP, et al. 1991. Atmospheric concentrations and deposition of Hg to a deciduous forest at Walker Branch Watershed, Tennessee, USA. *Water Air Soil Pollut* 56(1):577-594. <https://doi.org/10.1007/bf00342301>.
- Lindberg SE, Owens JG, Stratton WJ. 1994. Application of throughfall methods to estimate dry deposition of mercury. In: Watras CJ, Huckabee JW, eds. *Mercury pollution integration and synthesis*. Boca Raton, FL: Lewis Publishers, 261-271.
- Lindqvist O, Johansson K, Bringmark L, et al. 1991. Mercury in the Swedish environment - Recent research on causes, consequences and corrective methods. *Water Air Soil Pollut* 55(1-2):xi-261. <https://doi.org/10.1007/bf00542429>.
- Liu T, Zhang M, Guallar E, et al. 2019. Trace minerals, heavy metals, and preeclampsia: Findings from the Boston Birth Cohort. *J Am Heart Assoc* 8(16):e012436. <https://doi.org/10.1161/jaha.119.012436>.
- Liu J, Portnoy J, Um P, et al. 2021a. Blood lead and mercury levels are associated with low resting heart rate in community adolescent boys. *Int J Hyg Environ Health* 233:113685. <https://doi.org/10.1016/j.ijheh.2020.113685>.
- Liu M, Song J, Jiang Y, et al. 2021b. A case-control study on the association of mineral elements exposure and thyroid tumor and goiter. *Ecotoxicol Environ Saf* 208:111615. <https://doi.org/10.1016/j.ecoenv.2020.111615>.
- Liu Y, Zhang C, Qin Z, et al. 2022. Analysis of threshold effect of urinary heavy metal elements on the high prevalence of nephrolithiasis in men. *Biol Trace Elem Res* 200(3):1078-1088. <https://doi.org/10.1007/s12011-021-02740-z>.
- Liu Q, Hu S, Fan F, et al. 2023. Association of blood metals with serum sex hormones in adults: A cross-sectional study. *Environ Sci Pollut Res Int* 30(26):69628-69638. <https://doi.org/10.1007/s11356-023-27384-5>.
- Livardjani F, Ledig M, Kopp P, et al. 1991. Lung and blood superoxide dismutase activity in mercury vapor exposed rats: Effect of N-acetylcysteine treatment. *Toxicology* 66(3):289-295. [https://doi.org/10.1016/0300-483x\(91\)90200-k](https://doi.org/10.1016/0300-483x(91)90200-k).
- Llop S, Guxens M, Murcia M, et al. 2012. Prenatal exposure to mercury and infant neurodevelopment in a multicenter cohort in Spain: study of potential modifiers. *Am J Epidemiol* 175(5):451-465. <https://doi.org/10.1093/aje/kwr328>.
- Llop S, Lopez-Espinosa MJ, Murcia M, et al. 2015. Synergism between exposure to mercury and use of iodine supplements on thyroid hormones in pregnant women. *Environ Res* 138:298-305. <https://doi.org/10.1016/j.envres.2015.02.026>.
- Loan A, Leung JW, Cook DP, et al. 2023. Prenatal low-dose methylmercury exposure causes premature neuronal differentiation and autism-like behaviors in a rodent model. *iScience* 26(3):106093. <https://doi.org/10.1016/j.isci.2023.106093>.

8. REFERENCES

- Lodenius M, Autio S. 1989. Effects of acidification on the mobilization of cadmium and mercury from soils. *Arch Environ Contam Toxicol* 18(1-2):261-267. <https://doi.org/10.1007/bf01056212>.
- Lohren H, Bornhorst J, Galla H-J, et al. 2015. The blood–cerebrospinal fluid barrier – first evidence for an active transport of organic mercury compounds out of the brain. *Metallomics* 7(10):1420-1430. <https://doi.org/10.1039/c5mt00171d>.
- Lomonte C, Doronila AI, Gregory D, et al. 2010. Phytotoxicity of biosolids and screening of selected plant species with potential for mercury phytoextraction. *J Hazard Mater* 173(1-3):494-501. <https://doi.org/10.1016/j.jhazmat.2009.08.112>.
- Long LH, Cattanach J. 1961. Antoine vapour-pressure equations and heats of vaporization for the dimethyls of zinc, cadmium and mercury. *J Inorg Nucl Chem* 20(3-4):340-342. [https://doi.org/10.1016/0022-1902\(61\)80285-6](https://doi.org/10.1016/0022-1902(61)80285-6).
- Lopez AM, Fitzsimmons JN, Adams HM, et al. 2022. A time-series of heavy metal geochemistry in sediments of Galveston Bay estuary, Texas, 2017-2019. *Sci Total Environ* 806(Pt 3):150446. <https://doi.org/10.1016/j.scitotenv.2021.150446>.
- Louopou RC, Trottier H, Arbuckle TE, et al. 2020. Dental amalgams and risk of gestational hypertension in the MIREC study. *Pregnancy Hypertens* 21:84-89. <https://doi.org/10.1016/j.preghy.2020.04.015>.
- Love TM, Thurston SW, Davidson PW. 2017. Finding vulnerable subpopulations in the Seychelles Child Development Study: Effect modification with latent groups. *Stat Methods Med Res* 26(2):809-822. <https://doi.org/10.1177/0962280214560044>.
- Lovejoy HB, Bell ZG, Vizena TR. 1973. Mercury exposure evaluations and their correlation with urine mercury excretions. 4. Elimination of mercury by sweating. *J Occup Med* 15(7):590-591.
- Lozano M, Murcia M, Soler-Blasco R, et al. 2021. Exposure to mercury among 9-year-old children and neurobehavioural function. *Environ Int* 146:106173. <https://doi.org/10.1016/j.envint.2020.106173>.
- Lu Z, Ma Y, Gao L, et al. 2018. Urine mercury levels correlate with DNA methylation of imprinting gene H19 in the sperm of reproductive-aged men. *PLoS ONE* 13(4):e0196314. <https://doi.org/10.1371/journal.pone.0196314>.
- Lu YT, Qi WZ, Wang S, et al. 2020. Toxicity and risk assessment of mercury exposures from cinnabar and Baizi Yangxin Pills based on pharmacokinetic and tissue distribution studies. *J Ethnopharmacol* 250:112489. <https://doi.org/10.1016/j.jep.2019.112489>.
- Lu K, Liu T, Wu X, et al. 2023. Association between serum iron, blood lead, cadmium, mercury, selenium, manganese and low cognitive performance in old adults from National Health and Nutrition Examination Survey (NHANES): a cross-sectional study. *Br J Nutr* 130(10):1743-1753. <https://doi.org/10.1017/s0007114523000740>.
- Luecke RH, Wosilait WD, Pearce BA, et al. 1994. A physiologically based pharmacokinetic computer model for human pregnancy. *Teratology* 49(2):90-103. <https://doi.org/10.1002/tera.1420490205>.
- Luecke RH, Wosilait WD, Pearce BA, et al. 1997. A computer model and program for xenobiotic disposition during pregnancy. *Comput Methods Programs Biomed* 53(3):201-224.
- Lukacinova A, Benacka R, Sedlakova E, et al. 2012. Multigenerational lifetime low-dose exposure to heavy metals on selected reproductive parameters in rats. *J Environ Sci Health A Tox Hazard Subst Environ Eng* 47(9):1280-1287. <https://doi.org/10.1080/10934529.2012.672132>.
- Lukina AO, Fisher M, Khoury C, et al. 2021. Temporal variation of total mercury levels in the hair of pregnant women from the Maternal-Infant Research on Environmental Chemicals (MIREC) study. *Chemosphere* 264(Pt 1):128402. <https://doi.org/10.1016/j.chemosphere.2020.128402>.
- Lundgren KD, Swensson Å, Ulfvarson U. 1967. Studies in humans on the distribution of mercury in the blood and the excretion in urine after exposure to different mercury compounds. *Scand J Clin Lab Invest* 20(2):164-166. <https://doi.org/10.3109/00365516709076937>.
- Lyman SN, Cheng I, Gratz LE, et al. 2020. An updated review of atmospheric mercury. *Sci Total Environ* 707:135575. <https://doi.org/10.1016/j.scitotenv.2019.135575>.

8. REFERENCES

- Ma J, Zhang H, Zheng T, et al. 2022. Exposure to metal mixtures and hypertensive disorders of pregnancy: A nested case-control study in China. *Environ Pollut* 306:119439. <https://doi.org/10.1016/j.envpol.2022.119439>.
- Ma Y, Liang C, Wang Z, et al. 2023. Association between prenatal metals exposure and blood pressure in 5-6 years children: A birth cohort study. *Environ Res* 219:114974. <https://doi.org/10.1016/j.envres.2022.114974>.
- Mabille V, Roels H, Jacquet P, et al. 1984. Cytogenetic examination of leucocytes of workers exposed to mercury vapour. *Int Arch Occup Environ Health* 53(3):257-260. <https://doi.org/10.1007/bf00398818>.
- MacDonald JS, Harbison RD. 1977. Methyl mercury-induced encephalopathy in mice. *Toxicol Appl Pharmacol* 39(2):195-205. [https://doi.org/10.1016/0041-008x\(77\)90153-3](https://doi.org/10.1016/0041-008x(77)90153-3).
- Mackert JR, Berglund A. 1997. Mercury exposure from dental amalgam fillings: Absorbed dose and the potential for adverse health effects. *Crit Rev Oral Biol Med* 8(4):410-436.
- MacPherson S, Arbuckle TE, Fisher M. 2018. Adjusting urinary chemical biomarkers for hydration status during pregnancy. *J Expo Sci Environ Epidemiol* 28(5):481-493. <https://doi.org/10.1038/s41370-018-0043-z>.
- MacSween K, Stuppel G, Aas W, et al. 2022. Updated trends for atmospheric mercury in the Arctic: 1995-2018. *Sci Total Environ* 837:155802. <https://doi.org/10.1016/j.scitotenv.2022.155802>.
- Maeda E, Murata K, Kumazawa Y, et al. 2019. Associations of environmental exposures to methylmercury and selenium with female infertility: A case-control study. *Environ Res* 168:357-363. <https://doi.org/10.1016/j.envres.2018.10.007>.
- Magos L. 1967. Mercury-blood interaction and mercury uptake by the brain after vapor exposure. *Environ Res* 1(4):323-337.
- Magos L, Clarkson TW. 2006. Overview of the clinical toxicity of mercury. *Ann Clin Biochem* 43(Pt 4):257-268. <https://doi.org/10.1258/000456306777695654>.
- Magos L, Halbach S, Clarkson TW. 1978. Role of catalase in the oxidation of mercury vapor. *Biochem Pharmacol* 27(9):1373-1377. [https://doi.org/10.1016/0006-2952\(78\)90122-3](https://doi.org/10.1016/0006-2952(78)90122-3).
- Magos L, Clarkson TW, Hudson AR. 1989. The effects of dose of elemental mercury and first-pass circulation time on exhalation and organ distribution of inorganic mercury in rats. *Biochim Biophys Acta* 991(1):85-89. [https://doi.org/10.1016/0304-4165\(89\)90032-9](https://doi.org/10.1016/0304-4165(89)90032-9).
- Mahaffey KR, Clickner RP, Jeffries RA. 2009. Adult women's blood mercury concentrations vary regionally in the United States: association with patterns of fish consumption (NHANES 1999-2004). *Environ Health Perspect* 117(1):47-53. <https://doi.org/10.1289/ehp.11674>.
- Mahour K, Saxena PN. 2009. Assessment of haematotoxic potential of mercuric chloride in rat. *J Environ Biol* 30(5 Suppl):927-928.
- Mailhes JB. 1983. Methylmercury effects on Syrian hamster metaphase II oocyte chromosomes. *Environ Mutagen* 5(5):679-686.
- Malqui H, Anarghou H, Ouardi FZ, et al. 2018. Continuous exposure to inorganic mercury affects neurobehavioral and physiological parameters in mice. *J Mol Neurosci* 66(2):291-305. <https://doi.org/10.1007/s12031-018-1176-1>.
- Mansour MM, Dyer NC, Hoffman LH, et al. 1974. Placental transfer of mercuric nitrate and methyl mercury in the rat. *Am J Obstet Gynecol* 119(4):557-562. [https://doi.org/10.1016/0002-9378\(74\)90220-8](https://doi.org/10.1016/0002-9378(74)90220-8).
- Manzoli ES, Serpeloni JM, Grotto D, et al. 2015. Protective effects of the flavonoid chrysin against methylmercury-induced genotoxicity and alterations of antioxidant status, in vivo. *Oxid Med Cell Longev* 2015:1-7. <https://doi.org/10.1155/2015/602360>.
- Mao X, Chen C, Xun P, et al. 2019. Effects of seafood consumption and toenail mercury and selenium levels on cognitive function among American adults: 25 y of follow up. *Nutrition* 61:77-83. <https://doi.org/10.1016/j.nut.2018.11.002>.

8. REFERENCES

- Maqbool F, Niaz K, Hassan FI, et al. 2017. Immunotoxicity of mercury: Pathological and toxicological effects. *J Environ Sci Health C Environ Carcinog Ecotoxicol Rev* 35(1):29-46. <https://doi.org/10.1080/10590501.2016.1278299>.
- Maqbool F, Bahadar H, Hassani S, et al. 2019. Biochemical evidence on the potential role of methyl mercury in hepatic glucose metabolism through inflammatory signaling and free radical pathways. *J Cell Biochem* 120(9):16195-16205. <https://doi.org/10.1002/jcb.28899>.
- Marien K, Patrick GM. 2001. Exposure analysis of five fish-consuming populations for overexposure to methylmercury. *J Expo Anal Environ Epidemiol* 11(3):193-206. <https://doi.org/10.1038/sj.jea.7500160>.
- Marinho JS, Lima MO, de Oliveira Santos EC, et al. 2014. Mercury speciation in hair of children in three communities of the Amazon, Brazil. *BioMed Res Int* 2014:1-9. <https://doi.org/10.1155/2014/945963>.
- Marques RC, Garrofe Dorea J, Rodrigues Bastos W, et al. 2007. Maternal mercury exposure and neuro-motor development in breastfed infants from Porto Velho (Amazon), Brazil. *Int J Hyg Environ Health* 210(1):51-60. <https://doi.org/10.1016/j.ijheh.2006.08.001>.
- Marques RC, Bernardi JV, Dórea JG, et al. 2013a. Mercury transfer during pregnancy and breastfeeding: hair mercury concentrations as biomarker. *Biol Trace Elem Res* 154(3):326-332. <https://doi.org/10.1007/s12011-013-9743-3>.
- Marques RC, Bernardi JV, Dórea JG, et al. 2013b. Fish consumption during pregnancy, mercury transfer, and birth weight along the Madeira River Basin in Amazonia. *Int J Environ Res Public Health* 10(6):2150-2163. <https://doi.org/10.3390/ijerph10062150>.
- Marques RC, Moreira Mde F, Bernardi JV, et al. 2013c. Breast milk lead concentrations of mothers living near tin smelters. *Bull Environ Contam Toxicol* 91(5):549-554. <https://doi.org/10.1007/s00128-013-1093-5>.
- Marques RC, Bernardi JV, Abreu L, et al. 2015. Neurodevelopment outcomes in children exposed to organic mercury from multiple sources in a tin-ore mine environment in Brazil. *Arch Environ Contam Toxicol* 68(3):432-441. <https://doi.org/10.1007/s00244-014-0103-x>.
- Marsh DO, Clarkson TW, Cox C, et al. 1987. Fetal methylmercury poisoning: Relationship between concentration in single strands of maternal hair and child effects. *Arch Neurol* 44(10):1017-1022.
- Martin MD, McCann T, Naleway C, et al. 1996. The validity of spot urine samples for low-level occupational mercury exposure assessment and relationship to porphyrin and creatinine excretion rates. *J Pharmacol Exp Ther* 277(1):239-244.
- Maserejian NN, Trachtenberg FL, Assmann SF, et al. 2008. Dental amalgam exposure and urinary mercury levels in children: The New England Children's Amalgam Trial. *Environ Health Perspect* 116(2):256-262. <https://doi.org/10.1289/ehp.10440>.
- Mason RP, Reinfelder JR, Morel FM. 1995. Bioaccumulation of mercury and methylmercury. In: Porcella DB, Wheatley B, eds. *Proceedings of the third international Conference Whistler, British Columbia, July 10-14, 1994*. Boston, MA: Kluwer Academic Publishers, 915-921.
- Mason RP, Reinfelder JR, Morel FM. 1996. Uptake, toxicity, and trophic transfer of mercury in a coastal diatom. *Environ Sci Technol* 30(6):1835-1845.
- Mathiesen T, Ellingsen DG, Kjuus H. 1999. Neuropsychological effects associated with exposure to mercury vapor among former chloralkali workers. *Scand J Work Environ Health* 25(4):342-350. <https://doi.org/10.5271/sjweh.444>.
- Matsumoto N, Spindle A. 1982. Sensitivity of early mouse embryos to methylmercury toxicity. *Toxicol Appl Pharmacol* 64(1):108-117.
- Matsuo N, Suzuki T, Akagi H. 1989. Mercury concentration in organs of contemporary Japanese. *Arch Environ Health* 44(5):298-303.
- Matthews NH, Koh M, Li WQ, et al. 2019. A prospective study of toenail trace element levels and risk of skin cancer. *Cancer Epidemiol Biomarkers Prev* 28(9):1534-1543. <https://doi.org/10.1158/1055-9965.EPI-19-0214>.

8. REFERENCES

- McClam M, Liu J, Fan Y, et al. 2023. Associations between exposure to cadmium, lead, mercury and mixtures and women's infertility and long-term amenorrhea. *Arch Public Health* 81(1):161. <https://doi.org/10.1186/s13690-023-01172-6>.
- McGrother CW, Dugmore C, Phillips MJ, et al. 1999. Multiple sclerosis, dental caries and fillings: a case-control study. *Br Dent J* 187(5):261-264. <https://doi.org/10.1038/sj.bdj.4800255>.
- McKean SJ, Bartell SM, Hansen RL, et al. 2015. Prenatal mercury exposure, autism, and developmental delay, using pharmacokinetic combination of newborn blood concentrations and questionnaire data: a case control study. *Environ Health* 14:62. <https://doi.org/10.1186/s12940-015-0045-4>.
- McKelvey W, Jeffery N, Clark N, et al. 2011. Population-based inorganic mercury biomonitoring and the identification of skin care products as a source of exposure in New York City. *Environ Health Perspect* 119(2):203-209. <https://doi.org/10.1289/ehp.1002396>.
- McKelvey W, Alex B, Chernov C, et al. 2018. Tracking declines in mercury exposure in the New York City adult population, 2004-2014. *J Urban Health* 95(6):813-825. <https://doi.org/10.1007/s11524-018-0269-z>.
- McKeown-Eyssen GE, Ruedy J, Neims A. 1983. Methyl mercury exposure in northern Quebec. II. Neurologic findings in children. *Am J Epidemiol* 118(4):470-479. <https://doi.org/10.1093/oxfordjournals.aje.a113652>.
- McSorley EM, Yeates AJ, Mulhern MS, et al. 2018. Associations of maternal immune response with MeHg exposure at 28 weeks' gestation in the Seychelles Child Development Study. *Am J Reprod Immunol* 80(5):e13046. <https://doi.org/10.1111/aji.13046>.
- McSorley EM, van Wijngaarden E, Yeates AJ, et al. 2020. Methylmercury and long chain polyunsaturated fatty acids are associated with immune dysregulation in young adults from the Seychelles child development study. *Environ Res* 183:109072. <https://doi.org/10.1016/j.envres.2019.109072>.
- MDN. 2020. Mercury deposition network data. National Atmospheric Deposition Program. <http://nadp.slh.wisc.edu/MDN/>. December 16, 2020.
- Meador JP, Varanasi U, Robisch PA, et al. 1993. Toxic metals in pilot whales (*Globicephala melaena*) from strandings in 1986 and 1990 on Cape Cod, Massachusetts. *Can J Fish Aquat Sci* 50(12):2698-2706.
- Medina Pérez OM, Flórez-Vargas O, Rincón Cruz G, et al. 2021. Glutathione-related genetic polymorphisms are associated with mercury retention and nephrotoxicity in gold-mining settings of a Colombian population. *Sci Rep* 11(1):8716. <https://doi.org/10.1038/s41598-021-88137-3>.
- Meeker JD, Rossano MG, Protas B, et al. 2008. Cadmium, lead, and other metals in relation to semen quality: Human evidence for molybdenum as a male reproductive toxicant. *Environ Health Perspect* 116(11):1473-1479. <https://doi.org/10.1289/ehp.11490>.
- Meili M. 1991. The coupling of mercury and organic matter in the biogeochemical cycle - towards a mechanistic model for the boreal forest zone. *Water Air Soil Pollut* 56(1):333-347. <https://doi.org/10.1007/bf00342281>.
- Meili M, Iverfeldt A, Håkanson L. 1991. Mercury in the surface water of Swedish forest lakes - concentrations, speciation and controlling factors. *Water Air Soil Pollut* 56(1):439-453. <https://doi.org/10.1007/bf00342290>.
- Mendiola J, Moreno JM, Roca M, et al. 2011. Relationships between heavy metal concentrations in three different body fluids and male reproductive parameters: a pilot study. *Environ Health* 10(1):6. <https://doi.org/10.1186/1476-069X-10-6>.
- Mergler D. 2002. Review of neurobehavioral deficits and river fish consumption from the Tapajos (Brazil) and St. Lawrence (Canada). *Environ Toxicol Pharmacol* 12(2):93-99. [https://doi.org/10.1016/s1382-6689\(02\)00027-3](https://doi.org/10.1016/s1382-6689(02)00027-3).
- Mergler D, Belanger S, Larribe F, et al. 1998. Preliminary evidence of neurotoxicity associated with eating fish from the Upper St. Lawrence River Lakes. *Neurotoxicology* 19(4-5):691-702.

8. REFERENCES

- Miao J, Feng S, Dou S, et al. 2023. Association between mercury exposure and lung function in young adults: A prospective cohort study in Shandong, China. *Sci Total Environ* 878:162759. <https://doi.org/10.1016/j.scitotenv.2023.162759>.
- Mierle G. 1990. Aqueous inputs of mercury to Precambrian shield lakes in Ontario. *Environ Toxicol Chem* 9(7):843-851. <https://doi.org/10.1002/etc.5620090704>.
- Miettinen JK, Rahola T, Hattula T, et al. 1971. Elimination of 203-Hg-methylmercury in man. *Ann Clin Res* 3(2):116-122.
- 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.
- Milioni ALV, Nagy BV, Moura ALA, et al. 2017. Neurotoxic impact of mercury on the central nervous system evaluated by neuropsychological tests and on the autonomic nervous system evaluated by dynamic pupillometry. *Neurotoxicology* 59:263-269. <https://doi.org/10.1016/j.neuro.2016.04.010>.
- Miller JM, Chaffin DB, Smith RG. 1975. Subclinical psychomotor and neuromuscular changes in workers exposed to inorganic mercury. *Am Ind Hyg Assoc J* 36(10):725-733. <https://doi.org/10.1080/0002889758507331>.
- Miller CT, Zawadzka Z, Nagy E, et al. 1979. Indicators of genetic toxicity in leucocytes and granulocytic precursors after chronic methylmercury ingestion by cats. *Bull Environ Contam Toxicol* 21(3):296-303.
- Miller C, Karimi R, Silbernagel S, et al. 2018. Mercury, omega-3 fatty acids, and seafood intake are not associated with heart rate variability or QT interval. *Arch Environ Occup Health* 73(4):251-257. <https://doi.org/10.1080/19338244.2017.1315360>.
- Milne J, Christophers A, Silva PD. 1970. Acute mercurial pneumonitis. *Occup Environ Med* 27(4):334-338. <https://doi.org/10.1136/oem.27.4.334>.
- Mínguez-Alarcón L, Afeiche MC, Williams PL, et al. 2018. Hair mercury (Hg) levels, fish consumption and semen parameters among men attending a fertility center. *Int J Hyg Environ Health* 221(2):174-182. <https://doi.org/10.1016/j.ijheh.2017.10.014>.
- Mínguez-Alarcón L, Williams PL, Souter I, et al. 2021. Hair mercury levels, intake of omega-3 fatty acids and ovarian reserve among women attending a fertility center. *Int J Hyg Environ Health* 237:113825. <https://doi.org/10.1016/j.ijheh.2021.113825>.
- Minyard JP, Roberts EW. 1991. State findings on pesticide residues in foods-1988 and 1989. *J AOAC Int* 74(3):438-452. <https://doi.org/10.1093/jaoac/74.3.438>.
- Miskimmin BM. 1991. Effect of natural levels of dissolved organic carbon doc on methyl mercury formation and sediment-water partitioning. *Bull Environ Contam Toxicol* 47(5):743-750.
- Miskimmin BM, Rudd JW, Kelly CA. 1992. Influence of dissolved organic carbon, pH, and microbial respiration rates on mercury methylation and demethylation in lake water. *Can J Fish Aquat Sci* 49(1):17-22.
- Mitsumori K, Maita K, Saito T, et al. 1981. Carcinogenicity of methylmercury chloride in ICR mice: Preliminary note on renal carcinogenesis. *Cancer Lett* 12(4):305-310. [https://doi.org/10.1016/0304-3835\(81\)90172-5](https://doi.org/10.1016/0304-3835(81)90172-5).
- Mitsumori K, Hirano M, Ueda H, et al. 1990. Chronic toxicity and carcinogenicity of methylmercury chloride in B6C3F1 mice. *Fundam Appl Toxicol* 14(1):179-190. [https://doi.org/10.1016/0272-0590\(90\)90243-d](https://doi.org/10.1016/0272-0590(90)90243-d).
- Miyakawa T, Sumiyoshi S, Deshimaru M. 1974. Late changes in sciatic nerve of rats after a small dose of methyl methylmercury sulfide. *Acta Neuropathol (Berl)* 30(1):33-41. <https://doi.org/10.1007/BF00685320>.
- Miyake Y, Tanaka K, Yasutake A, et al. 2011. Lack of association of mercury with risk of wheeze and eczema in Japanese children: the Osaka Maternal and Child Health Study. *Environ Res* 111(8):1180-1184. <https://doi.org/10.1016/j.envres.2011.07.003>.
- Miyashita C, Saijo Y, Ito Y, et al. 2021. Association between the concentrations of metallic elements in maternal blood during pregnancy and prevalence of abdominal congenital malformations: The Japan

8. REFERENCES

- Environment and Children's study. *Int J Environ Res Public Health* 18(19):10103. <https://doi.org/10.3390/ijerph181910103>.
- Miyazaki J, Ikehara S, Tanigawa K, et al. 2023. Prenatal exposure to selenium, mercury, and manganese during pregnancy and allergic diseases in early childhood: The Japan Environment and Children's study. *Environ Int* 179:108123. <https://doi.org/10.1016/j.envint.2023.108123>.
- Mocevic E, Specht IO, Marott JL, et al. 2013. Environmental mercury exposure, semen quality and reproductive hormones in Greenlandic Inuit and European men: a cross-sectional study. *Asian J Androl* 15(1):97-104. <https://doi.org/10.1038/aja.2012.121>.
- Mohamed MK, Burbacher TM, Mottet NK. 1987. Effects of methyl mercury on testicular functions in *Macaca fascicularis* monkeys. *Pharmacol Toxicol* 60(1):29-36. <https://doi.org/10.1111/j.1600-0773.1987.tb01715.x>.
- Mohammad Abu-Taweel G, Al-Fifi Z. 2021. Protective effects of curcumin towards anxiety and depression-like behaviors induced mercury chloride. *Saudi J Biol Sci* 28(1):125-134. <https://doi.org/10.1016/j.sjbs.2020.09.011>.
- Mokrzan EM, Kerper LE, Ballatori N, et al. 1995. Methylmercury-thiol uptake into cultured brain capillary endothelial cells on amino acid system L. *J Pharmacol Exp Ther* 272(3):1277-1284.
- Møller L, Kristensen TS. 1992. Blood lead as a cardiovascular risk factor. *Am J Epidemiol* 136(9):1091-1100. <https://doi.org/10.1093/oxfordjournals.aje.a116574>.
- Monastero RN, Karimi R, Nyland JF, et al. 2017. Mercury exposure, serum antinuclear antibodies, and serum cytokine levels in the Long Island Study of Seafood Consumption: A cross-sectional study in NY, USA. *Environ Res* 156:334-340. <https://doi.org/10.1016/j.envres.2017.03.037>.
- Montgomery KS, Mackey J, Thuett K, et al. 2008. Chronic, low-dose prenatal exposure to methylmercury impairs motor and mnemonic function in adult C57/B6 mice. *Behav Brain Res* 191(1):55-61. <https://doi.org/10.1016/j.bbr.2008.03.008>.
- Moody RP, Joncas J, Richardson M, et al. 2009. Contaminated soils (II): In vitro dermal absorption of nickel (Ni-63) and mercury (Hg-203) in human skin. *J Toxicol Environ Health A* 72(8):551-559. <https://doi.org/10.1080/15287390802706322>.
- Moon S. 2013. Association of lead, mercury and cadmium with diabetes in the Korean population: the Korea National Health and Nutrition Examination Survey (KNHANES) 2009-2010. *Diabet Med* 30(4):e143-148. <https://doi.org/10.1111/dme.12103>.
- Moon S. 2017. Association between blood mercury level and visceral adiposity in adults. *Diabetes Metab J* 41(2):96-98. <https://doi.org/10.4093/dmj.2017.41.2.96>.
- Moon SH, Kang Y, Park KM. 2017. A one-dimensional Hg(II) coordination polymer based on bis-(pyridin-3-ylmeth-yl)sulfane. *Acta Crystallogr E Crystallogr Commun* 73(Pt 12):1871-1874. <https://doi.org/10.1107/s205698901701619x>.
- Moon MK, Lee I, Lee A, et al. 2022. Lead, mercury, and cadmium exposures are associated with obesity but not with diabetes mellitus: Korean National Environmental Health Survey (KoNEHS) 2015-2017. *Environ Res* 204(Pt A):111888. <https://doi.org/10.1016/j.envres.2021.111888>.
- Morcillo MA, Santamaria J. 1995. Whole-body retention, and urinary and fecal excretion of mercury after subchronic oral exposure to mercuric chloride in rats. *Biomaterials* 8(4):301-308.
- Mordukhovich I, Wright RO, Hu H, et al. 2012. Associations of toenail arsenic, cadmium, mercury, manganese, and lead with blood pressure in the normative aging study. *Environ Health Perspect* 120(1):98-104. <https://doi.org/10.1289/ehp.1002805>.
- Moreira EL, de Oliveira J, Dutra MF, et al. 2012. Does methylmercury-induced hypercholesterolemia play a causal role in its neurotoxicity and cardiovascular disease? *Toxicol Sci* 130(2):373-382. <https://doi.org/10.1093/toxsci/kfs252>.
- Morgan DL, Chanda SM, Price HC, et al. 2002. Disposition of inhaled mercury vapor in pregnant rats: Maternal toxicity and effects on developmental outcome. *Toxicol Sci* 66(2):261-273. <https://doi.org/10.1093/toxsci/66.2.261>.
- Mori T, Sato K, Kusaka Y, et al. 2007. Positive patch test for mercury possibly from exposure to amalgam. *Environ Health Prev Med* 12(4):172-177. <https://doi.org/10.1007/bf02897987>.

8. REFERENCES

- Mori N, Yamamoto M, Tsukada E, et al. 2012. Comparison of in vivo with in vitro pharmacokinetics of mercury between methylmercury chloride and methylmercury cysteine using rats and Caco2 cells. *Arch Environ Contam Toxicol* 63(4):628-636. <https://doi.org/10.1007/s00244-012-9800-5>.
- Morris GE. 1960. Dermatoses from phenylmercuric salts. *Arch Environ Health* 1:53-55.
- Morrisette J, Takser L, St-Amour G, et al. 2004. Temporal variation of blood and hair mercury levels in pregnancy in relation to fish consumption history in a population living along the St. Lawrence River. *Environ Res* 95(3):363-374. <https://doi.org/10.1016/j.envres.2003.12.007>.
- Morrow PE, Gibb FR, Johnson LA. 1964. Clearance of insoluble dust from the lower respiratory tract. *Health Phys* 10(8):543-555. <https://doi.org/10.1097/00004032-196408000-00003>.
- Mortada WL, Sobh MA, El-Defrawy MM, et al. 2002. Mercury in dental restoration: is there a risk of nephrotoxicity? *J Nephrol* 15(2):171-176.
- Mortimer DC. 1985. Freshwater aquatic macrophytes as heavy metal monitors - the Ottawa River experience. *Environ Monit Assess* 5(3):311-324.
- Mottet NK, Body RL, Wilkens V, et al. 1987. Biologic variables in the hair uptake of methylmercury from blood in the macaque monkey. *Environ Res* 42(2):509-523.
- Mousavi A. 2015. Mercury(I) chloride in vivo oxidation: a thermodynamic study. *Main Group Metal Chem* 38(3-4):121-124. <https://doi.org/10.1515/mgmc-2015-0012>.
- Moussa H, Hachfi L, Trimeche M, et al. 2010. Accumulation of mercury and its effects on testicular functions in rats intoxicated orally by methylmercury. *Andrologia* 43(1):23-27. <https://doi.org/10.1111/j.1439-0272.2009.01003.x>.
- Movassagh H, Halchenko Y, Sampath V, et al. 2021. Maternal gestational mercury exposure in relation to cord blood T cell alterations and placental gene expression signatures. *Environ Res* 201:111385. <https://doi.org/10.1016/j.envres.2021.111385>.
- Mozaffarian D. 2009. Fish, mercury, selenium and cardiovascular risk: current evidence and unanswered questions. *Int J Environ Res Public Health* 6(6):1894-1916. <https://doi.org/10.3390/ijerph6061894>.
- Mozaffarian D, Rimm EB. 2006. Fish intake, contaminants, and human health: Evaluating the risks and the benefits. *JAMA* 296(15):1885-1899. <https://doi.org/10.1001/jama.296.15.1885>.
- Mozaffarian D, Shi P, Morris JS, et al. 2011. Mercury exposure and risk of cardiovascular disease in two U.S. cohorts. *N Engl J Med* 364(12):1116-1125. <https://doi.org/10.1056/NEJMoa1006876>.
- Mozaffarian D, Shi P, Morris JS, et al. 2012. Mercury exposure and risk of hypertension in US men and women in 2 prospective cohorts. *Hypertension* 60(3):645-652. <https://doi.org/10.1161/hypertensionaha.112.196154>.
- Mozaffarian D, Shi P, Morris JS, et al. 2013. Methylmercury exposure and incident diabetes in U.S. men and women in two prospective cohorts. *Diabetes Care* 36(11):3578-3584. <https://doi.org/10.2337/dc13-0894>.
- Muckle G, Dewailly E, Ayotte P. 1998. Prenatal exposure of Canadian children to polychlorinated biphenyls and mercury. *Can J Public Health* 89:S20-S25.
- Muckle G, Ayotte P, Dewailly EE, et al. 2001. Prenatal exposure of the northern Québec Inuit infants to environmental contaminants. *Environ Health Perspect* 109(12):1291-1299. <https://doi.org/10.1289/ehp.011091291>.
- Muir DCG, Wagemann R, Hargrave BT, et al. 1992. Arctic marine ecosystem contamination. *Sci Total Environ* 122(1-2):75-134. [https://doi.org/10.1016/0048-9697\(92\)90246-o](https://doi.org/10.1016/0048-9697(92)90246-o).
- Mulder KM, Kostyniak PJ. 1985a. Effect of L-(alpha S,5S)-alpha-amino-3-chloro-4,5-dihydro-5-isoxazoleacetic acid on urinary excretion of methylmercury in the mouse. *J Pharmacol Exp Ther* 234(1):156-160.
- Mulder KM, Kostyniak PJ. 1985b. Involvement of glutathione in the enhanced renal excretion of methylmercury in CFW Swiss mice. *Toxicol Appl Pharmacol* 78(3):451-457.
- Muldoon MF, Ryan CM, Yao JK, et al. 2014. Long-chain omega-3 fatty acids and optimization of cognitive performance. *Mil Med* 179(11S):95-105. <https://doi.org/10.7205/milmed-d-14-00168>.

8. REFERENCES

- Mumtaz MM, Ray M, Crowell SR, et al. 2012a. Translational research to develop a human PBPK models tool kit-volatile organic compounds (VOCs). *J Toxicol Environ Health A* 75(1):6-24. <https://doi.org/10.1080/15287394.2012.625546>.
- Mumtaz M, Fisher J, Blount B, et al. 2012b. Application of physiologically based pharmacokinetic models in chemical risk assessment. *J Toxicol* 2012:904603. <https://doi.org/10.1155/2012/904603>.
- Munthe J, McElroy WJ. 1992. Some aqueous reactions of potential importance in the atmospheric chemistry of mercury. *Atmos Environ* 26A(4):553-557.
- Murata K, Weihe P, Renzoni A, et al. 1999a. Delayed evoked potentials in children exposed to methylmercury from seafood. *Neurotoxicol Teratol* 21(4):343-348.
- Murata K, Weihe P, Araki S, et al. 1999b. Evoked potentials in Faroese children prenatally exposed to methylmercury. *Neurotoxicol Teratol* 21(4):471-472.
- Murata K, Budtz-Jorgensen E, Grandjean P. 2002. Benchmark dose calculations for methylmercury-associated delays on evoked potential latencies in two cohorts of children. *Risk Anal* 22(3):465-474.
- Murata K, Weihe P, Budtz-Jorgensen E, et al. 2004a. Delayed brainstem auditory evoked potential latencies in 14-year-old children exposed to methylmercury. *J Pediatr* 144(2):177-183. <https://doi.org/10.1016/j.jpeds.2003.10.059>.
- Murata K, Sakamoto M, Nakai K, et al. 2004b. Effects of methylmercury on neurodevelopment in Japanese children in relation to the Madeiran study. *Int Arch Occup Environ Health* 77(8):571-579. <https://doi.org/10.1007/s00420-004-0542-1>.
- Murcia M, Ballester F, Enning AM, et al. 2016. Prenatal mercury exposure and birth outcomes. *Environ Res* 151:11-20. <https://doi.org/10.1016/j.envres.2016.07.003>.
- Myers GJ, Marsh DO, Davidson PW, et al. 1995. Main neurodevelopmental study of Seychellois children following in utero exposure to methylmercury from a maternal fish diet: outcome at six months. *Neurotoxicology* 16(4):653-664.
- Myers GJ, Davidson PW, Shamlaye CF, et al. 1997. Effects of prenatal methylmercury exposure from a high fish diet on developmental milestones in the Seychelles Child Development Study. *Neurotoxicology* 18(3):819-829.
- Myers GJ, Davidson PW, Palumbo D, et al. 2000. Secondary analysis from the Seychelles Child Development Study: the child behavior checklist. *Environ Res* 84(1):12-19. <https://doi.org/10.1006/enrs.2000.4085>.
- Myers GJ, Davidson PW, Cox C, et al. 2003. Prenatal methylmercury exposure from ocean fish consumption in the Seychelles child development study. *Lancet* 361(9370):1686-1692. [https://doi.org/10.1016/s0140-6736\(03\)13371-5](https://doi.org/10.1016/s0140-6736(03)13371-5).
- Myers GJ, Thurston SW, Pearson AT, et al. 2009. Postnatal exposure to methyl mercury from fish consumption: a review and new data from the Seychelles Child Development Study. *Neurotoxicology* 30(3):338-349. <https://doi.org/10.1016/j.neuro.2009.01.005>.
- Myers GJ, Davidson PW, Shamlaye C, et al. 2020. The Seychelles Child Development Study of methyl mercury from fish consumption: analysis of subscales from the Child Behaviour Checklist at age 107 months in the main cohort. *Neurotoxicology* 81:331-338. <https://doi.org/10.1016/j.neuro.2020.09.025>.
- NADP. 2024. AMNet: Atmospheric mercury data. National Atmospheric Deposition Program. <http://nadp.slh.wisc.edu/data/AMNet/>. April 4, 2024.
- Nagahara N. 2011. Catalytic site cysteines of thiol enzyme: Sulfurtransferases. *J Amino Acids* 2011:1-7. <https://doi.org/10.4061/2011/709404>.
- Nagano M, Yasutake A, Miura K. 2010. Demethylation of methylmercury in human neuroblastoma, glioblastoma and liver cells. *J Health Sci* 56(3):326-330. <https://doi.org/10.1248/jhs.56.326>.
- Nagar RN, Bhattacharya L. 2001. Effect of mercuric chloride on testicular activities in mice, *Musculus albinus*. *J Environ Biol* 22(1):15-18.
- Nakada Y, Adachi T. 1999. Effect of experimentally induced renal failure on testicular testosterone synthesis in rats. *Arch Androl* 43(1):37-45. <https://doi.org/10.1080/014850199262715>.
- Nakai S, Machida I. 1973. Genetic effect of organic mercury on yeast. *Mutat Res* 21(6):348.

8. REFERENCES

- Nakamura M, Hachiya N, Murata KY, et al. 2014. Methylmercury exposure and neurological outcomes in Taiji residents accustomed to consuming whale meat. *Environ Int* 68:25-32. <https://doi.org/10.1016/j.envint.2014.03.005>.
- Nakamura M, Tatsuta N, Murata K, et al. 2023. Neurodevelopmental associations of prenatal and postnatal methylmercury exposure among first-grade children in the Kinan region, Japan. *Environ Res* 235:116688. <https://doi.org/10.1016/j.envres.2023.116688>.
- Nan Y, Yang J, Yang J, et al. 2024. Associations between individual and combined metal exposures in whole blood and kidney function in U.S. adults aged 40 years and older. *Biol Trace Elem Res* 202(3):850-865. <https://doi.org/10.1007/s12011-023-03722-z>.
- NAS/NRC. 2006. Human biomonitoring for environmental chemicals. Washington, DC: The National Academies Press, National Research Council. <https://doi.org/10.17226/11700>.
- Nascimento S, Goethel G, Gauer B, et al. 2018. Exposure to environment chemicals and its possible role in endocrine disruption of children from a rural area. *Environ Res* 167:488-498. <https://doi.org/10.1016/j.envres.2018.07.039>.
- Nascimento TS, Pinto DV, Dias RP, et al. 2022. Chronic methylmercury intoxication induces systemic inflammation, behavioral, and hippocampal amino acid changes in C57Bl6J adult mice. *Int J Mol Sci* 23(22):13837. <https://doi.org/10.3390/ijms232213837>.
- Nater EA, Grigal DF. 1992. Regional trends in mercury distribution across the Great Lakes states, north central USA. *Nature* 358(6382):139-141. <https://doi.org/10.1038/358139a0>.
- Neghab M, Choobineh A, Hassan Zadeh J, et al. 2011. Symptoms of intoxication in dentists associated with exposure to low levels of mercury. *Ind Health* 49(2):249-254.
- NESCAUM. 1998. Northeast states and eastern Canadian provinces - mercury study - a framework for action. Boston, MA: Northeast States for Coordinated Air Use Management.
- Newland MC, Reile PA. 1999. Blood and brain mercury levels after chronic gestational exposure to methylmercury in rats. *Toxicol Sci* 50(1):106-116. <https://doi.org/10.1093/toxsci/50.1.106>.
- Newland MC, Rasmussen EB. 2000. Aging unmasks adverse effects of gestational exposure to methylmercury in rats. *Neurotoxicol Teratol* 22(6):819-828. [https://doi.org/10.1016/s0892-0362\(00\)00107-0](https://doi.org/10.1016/s0892-0362(00)00107-0).
- Newland MC, Warfvinge K, Berlin M. 1996. Behavioral consequences of in utero exposure to mercury vapor: Alterations in lever-press durations and learning in squirrel monkeys. *Toxicol Appl Pharmacol* 139(2):374-386. <https://doi.org/10.1006/taap.1996.0178>.
- Newland MC, Reile PA, Langston JL. 2004. Gestational exposure to methylmercury retards choice in transition in aging rats. *Neurotoxicol Teratol* 26(2):179-194. <https://doi.org/10.1016/j.ntt.2003.12.004>.
- Newton D, Fry FA. 1978. The retention and distribution of radioactive mercuric oxide following accidental inhalation. *Ann Occup Hyg* 21(1):21-32.
- Ngim CH, Foo SC, Boey KW, et al. 1992. Chronic neurobehavioural effects of elemental mercury in dentists. *Br J Ind Med* 49(11):782-790. <https://doi.org/10.1136/oem.49.11.782>.
- Nguyen HD. 2023. Cadmium, lead, and mercury interactions on obstructive lung function in pre- and postmenopausal women. *Environ Sci Pollut Res Int* 30(29):73485-73496. <https://doi.org/10.1007/s11356-023-27503-2>.
- Nguyen HD, Oh H, Hoang NHM, et al. 2022. Environmental science and pollution research role of heavy metal concentrations and vitamin intake from food in depression: a national cross-sectional study (2009-2017). *Environ Sci Pollut Res Int* 29(3):4574-4586. <https://doi.org/10.1007/s11356-021-15986-w>.
- Nielsen JB. 1992. Toxicokinetics of mercuric chloride and methylmercuric chloride in mice. *J Toxicol Environ Health* 37(1):85-122. <https://doi.org/10.1080/15287399209531659>.
- Nielsen JB, Andersen O. 1990. Disposition and retention of mercuric chloride in mice after oral and parenteral administration. *J Toxicol Environ Health* 30(3):167-180. <https://doi.org/10.1080/15287399009531420>.

8. REFERENCES

- Nielsen JB, Andersen O. 1991. Methyl mercuric chloride toxicokinetics in mice. I: Effects of strain, sex, route of administration and dose. *Pharmacol Toxicol* 68(3):201-207.
- Nielsen JB, Hultman P. 1998. Strain dependence of steady-state retention and elimination of mercury in mice after prolonged exposure to mercury(II) chloride. *Analyst* 123(1):87-90.
- Nielsen JB, Hultman P. 2002. Mercury-induced autoimmunity in mice. *Environ Health Perspect* 110(Suppl 5):877-881. <https://doi.org/10.1289/ehp.02110s5877>.
- Nielsen JB, Andersen HR, Andersen O, et al. 1991. Mercuric chloride-induced kidney damage in mice: Time course and effect of dose. *J Toxicol Environ Health* 34(4):469-483. <https://doi.org/10.1080/15287399109531583>.
- Nielsen JB, Andersen HL, Sorensen JA, et al. 1992. Localization of gastrointestinal deposition of mercuric chloride studied in vivo. *Pharmacol Toxicol* 70(4):262-267.
- Nielsen AB, Davidsen M, Bjerregaard P. 2012. The association between blood pressure and whole blood methylmercury in a cross-sectional study among Inuit in Greenland. *Environ Health* 11:44. <https://doi.org/10.1186/1476-069x-11-44>.
- Nielsen SJ, Kit BK, Aoki Y, et al. 2014. Seafood consumption and blood mercury concentrations in adults aged ≥ 20 y, 2007-2010. *Am J Clin Nutr* 99(5):1066-1070. <https://doi.org/10.3945/ajcn.113.077081>.
- Nielsen-Kudsk F. 1965a. Absorption of mercury vapour from the respiratory tract in man. *Acta Pharmacol Toxicol* 23(2):250-262. <https://doi.org/10.1111/j.1600-0773.1965.tb03592.x>.
- Nielsen-Kudsk F. 1965b. The influence of ethyl alcohol on the absorption of mercury vapour from the lungs in man. *Acta Pharmacol Toxicol* 23(2):263-274. <https://doi.org/10.1111/j.1600-0773.1965.tb03593.x>.
- Nielsen-Kudsk F. 1973. Biological oxidation of elemental mercury. In: Miller MW, Clarkson TW, eds. *Mercury, mercurials and mercaptans*. Springfield, IL: Charles C. Thomas, 355.
- Nierenberg DW, Nordgren RE, Chang MB, et al. 1998. Delayed cerebellar disease and death after accidental exposure to dimethylmercury. *N Engl J Med* 338(23):1672-1676. <https://doi.org/10.1056/nejm199806043382305>.
- Nikolaychuk PA. 2016. Is calomel truly a poison and what happens when it enters the human stomach? A study from the thermodynamic viewpoint. *Main Group Metal Chem* 39(1-2):41-47. <https://doi.org/10.1515/mgmc-2015-0040>.
- Nilsen FM, Tolve NS. 2020. A systematic review and meta-analysis examining the interrelationships between chemical and non-chemical stressors and inherent characteristics in children with ADHD. *Environ Res* 180:108884. <https://doi.org/10.1016/j.envres.2019.108884>.
- NIOSH. 1994a. Mercury (organo) alkyl compounds (as Hg). Immediately dangerous to life or health concentrations (IDLH). Atlanta, GA: National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention. <https://www.cdc.gov/niosh/idlh/merc-hg.html>. November 12, 2020.
- NIOSH. 1994b. Mercury compounds [except (organo) alkyls] (as Hg). Immediately dangerous to life or health concentrations (IDLH). Atlanta, GA: National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention. <https://www.cdc.gov/niosh/idlh/7439976.html>. November 12, 2020.
- NIOSH. 2010. NIOSH backgrounder: Alice's Mad Hatter & work-related illness. National Institute for Occupational Safety and Health. <https://www.cdc.gov/niosh/updates/upd-03-04-10.html>. January 5, 2022.
- NIOSH. 2019a. Mercury (organo) alkyl compounds (as Hg). NIOSH pocket guide to chemical hazards. Atlanta, GA: National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention. <https://www.cdc.gov/niosh/npg/npgd0384.html>. November 12, 2020.
- NIOSH. 2019b. Mercury compounds [except (organo) alkyls] (as Hg). NIOSH pocket guide to chemical hazards. Atlanta, GA: National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention. <https://www.cdc.gov/niosh/npg/npgd0383.html>. November 12, 2020.

8. REFERENCES

- NJDEP. 2007. Cultural uses of mercury in New Jersey - year 2 mercury vapor in residential buildings - Comparison of communities that use mercury for cultural purposes with a reference community. Trenton, NJ: New Jersey Department of Environmental Protection. <https://www.nj.gov/dep/dsr/research/mercury-cultural-yr2.pdf>. May 17, 2021.
- NLM. 2020. PubChem compound summary: Mercury. National Library of Medicine. <https://pubchem.ncbi.nlm.nih.gov/compound/Mercury>. January 11, 2021.
- Noisel N, Bouchard M, Carrier G, et al. 2011. Comparison of a toxicokinetic and a questionnaire-based approach to assess methylmercury intake in exposed individuals. *J Expo Sci Environ Epidemiol* 21(3):328-335. <https://doi.org/10.1038/jes.2010.33>.
- Nolen GA, Buchler EV, Geil RG, et al. 1972. Effects of trisodium nitrotriacetate on cadmium and methylmercury toxicity and teratogenicity in rats. *Toxicol Appl Pharmacol* 23(2):222-223. [https://doi.org/10.1016/0041-008x\(72\)90186-x](https://doi.org/10.1016/0041-008x(72)90186-x).
- Nonaka H, Nakada T, Iijima M, et al. 2011. Metal patch test results from 1990-2009. *J Dermatol* 38(3):267-271. <https://doi.org/10.1111/j.1346-8138.2010.00980.x>.
- Nordberg GF, Serenius F. 1969. Distribution of inorganic mercury in the guinea pig brain. *Acta Pharmacol Toxicol (Copenh)* 27:269-283.
- Nordenhall K, Dock L, Vahter M. 1998. Cross-fostering study of methyl mercury retention, demethylation and excretion in the neonatal hamster. *Pharmacol Toxicol* 82(3):132-136.
- Nordhagen HP, Ellingsen DG, Kjuus H. 1994. Production and surveillance of mercury exposure over 40 years at a chloralkali plant. *Ann Occup Hyg* 38(5):777-788. <https://doi.org/10.1093/annhyg/38.5.777>.
- Nordlind K, Liden S. 1992. Patch test reactions to metal salts in patients with oral mucosal lesions associated with amalgam restorations. *Contact Dermatitis* 27(3):157-160. <https://doi.org/10.1111/j.1600-0536.1992.tb05245.x>.
- Nørgaard JO, Møller-Madsen B, Hertel N, et al. 1989. Silver enhancement of tissue mercury: Demonstration of mercury in autometallographic silver grains from rat kidneys. *J Histochem Cytochem* 37(10):1545-1547. <https://doi.org/10.1177/37.10.2778309>.
- Norseth T. 1971. Biotransformation of methyl mercuric salts in the mouse studied by specific determination of inorganic mercury. *Acta Pharmacol Toxicol (Copenh)* 29(4):375-384. <https://doi.org/10.1111/j.1600-0773.1971.tb00597.x>.
- Norseth T, Clarkson TW. 1970. Studies on the biotransformation of ²⁰³Hg-labeled methyl mercury chloride in rats. *Arch Environ Health* 21(6):717-727.
- NTP. 1993. Toxicology and carcinogenesis studies of mercuric chloride (CAS no. 7487-94-7) in F344/N rats and B6C3F1 mice (gavage studies). Research Triangle Park, NC: National Toxicology Program. NTP TR 408. NIH publication no. 91-3139.
- NTP. 1997. Chemical repository (Radian Corporation August 29, 1991) phenylmercuric acetate. National Toxicology Program.
- NTP. 2016. Substances listed in the fourteenth report on carcinogens. 14th Report on carcinogens. National Toxicology Program. <https://ntp.niehs.nih.gov/whatwestudy/assessments/cancer/roc/index.html>. January 19, 2021.
- NTP. 2021. CASRN index. In: Report on carcinogens. 15th ed. National Toxicology Program, <https://ntp.niehs.nih.gov/go/roc15>. January 10, 2022.
- Nunes PBO, Ferreira MKM, Ribeiro Frazão D, et al. 2022. Effects of inorganic mercury exposure in the alveolar bone of rats: an approach of qualitative and morphological aspects. *PeerJ* 10:e12573. <https://doi.org/10.7717/peerj.12573>.
- Nyanza EC, Dewey D, Manyama M, et al. 2020. Maternal exposure to arsenic and mercury and associated risk of adverse birth outcomes in small-scale gold mining communities in Northern Tanzania. *Environ Int* 137:105450. <https://doi.org/10.1016/j.envint.2019.105450>.
- Nyanza EC, Bernier FP, Martin JW, et al. 2021. Effects of prenatal exposure and co-exposure to metallic or metalloid elements on early infant neurodevelopmental outcomes in areas with small-scale gold

8. REFERENCES

- mining activities in Northern Tanzania. *Environ Int* 149:106104. <https://doi.org/10.1016/j.envint.2020.106104>.
- Nyland JF, Wang SB, Shirley DL, et al. 2011. Fetal and maternal immune responses to methylmercury exposure: a cross-sectional study. *Environ Res* 111(4):584-589. <https://doi.org/10.1016/j.envres.2011.02.010>.
- Nylander M, Friberg L, Lind B. 1987. Mercury concentrations in the human brain and kidneys in relation to exposure from dental amalgam fillings. *Swed Dent J* 11(5):179-187.
- Oberly TJ, Piper CE, McDonald DS. 1982. Mutagenicity of metal salts in the L51784 mouse lymphoma assay. *J Toxicol Environ Health* 9(3):367-376.
- O'Donoghue JL, Watson GE, Brewer R, et al. 2020. Neuropathology associated with exposure to different concentrations and species of mercury: A review of autopsy cases and the literature. *Neurotoxicology* 78:88-98. <https://doi.org/10.1016/j.neuro.2020.02.011>.
- Ohno T, Sakamoto M, Kurosawa T, et al. 2007. Total mercury levels in hair, toenail, and urine among women free from occupational exposure and their relations to renal tubular function. *Environ Res* 103(2):191-197. <https://doi.org/10.1016/j.envres.2006.06.009>.
- Oken E, Radesky JS, Wright RO, et al. 2008. Maternal fish intake during pregnancy, blood mercury levels, and child cognition at age 3 years in a US cohort. *Am J Epidemiol* 167(10):1171-1181. <https://doi.org/10.1093/aje/kwn034>.
- Oken E, Rifas-Shiman SL, Amarasiriwardena C, et al. 2016. Maternal prenatal fish consumption and cognition in mid childhood: Mercury, fatty acids, and selenium. *Neurotoxicol Teratol* 57:71-78. <https://doi.org/10.1016/j.ntt.2016.07.001>.
- Okubo H, Nakayama SF. 2023. Periconceptional maternal diet quality influences blood heavy metal concentrations and their effect on low birth weight: the Japan Environment and Children's Study. *Environ Int* 173:107808. <https://doi.org/10.1016/j.envint.2023.107808>.
- Oliveira RB, Gomes-Leal W, do-Nascimento JL, et al. 1998. Methylmercury intoxication and histochemical demonstration of NADPH-diaphorase activity in the striate cortex of adult cats. *Braz J Med Biol Res* 31(9):1157-1161.
- Oliveira RB, Malm O, Guimaraes JR. 2001. Distribution of methylmercury and inorganic mercury in neonate hamsters dosed with methylmercury during fetal life. *Environ Res* 86(1):73-79. <https://doi.org/10.1006/enrs.2001.4220>.
- Oliveira CS, Oliveira VA, Ineu RP, et al. 2012. Biochemical parameters of pregnant rats and their offspring exposed to different doses of inorganic mercury in drinking water. *Food Chem Toxicol* 50(7):2382-2387. <https://doi.org/10.1016/j.fct.2012.04.046>.
- Oliveira CS, Joshee L, Zalups RK, et al. 2015. Disposition of inorganic mercury in pregnant rats and their offspring. *Toxicology* 335:62-71. <https://doi.org/10.1016/j.tox.2015.07.006>.
- Oliveira CS, Oliveira VA, Costa LM, et al. 2016. Inorganic mercury exposure in drinking water alters essential metal homeostasis in pregnant rats without altering rat pup behavior. *Reprod Toxicol* 65:18-23. <https://doi.org/10.1016/j.reprotox.2016.06.013>.
- Oliveira C, Joshee L, George H, et al. 2017. Oral exposure of pregnant rats to toxic doses of methylmercury alters fetal accumulation. *Reprod Toxicol* 69:265-275. <https://doi.org/10.1016/j.reprotox.2017.03.008>.
- Oliveira AN, Pinheiro AM, Belém-Filho IJA, et al. 2018. Unravelling motor behaviour hallmarks in intoxicated adolescents: methylmercury subtoxic-dose exposure and binge ethanol intake paradigm in rats. *Environ Sci Pollut Res Int* 25(22):21937-21948. <https://doi.org/10.1007/s11356-018-2235-4>.
- Oliveira RAA, Pinto BD, Rebouças BH, et al. 2021. Neurological impacts of chronic methylmercury exposure in Mundurucu indigenous adults: Somatosensory, motor, and cognitive abnormalities. *Int J Environ Res Public Health* 18(19):10270. <https://doi.org/10.3390/ijerph181910270>.
- Olson BH, Cayless SM, Ford S, et al. 1991. Toxic element contamination and the occurrence of mercury-resistant bacteria in Hg-contaminated soil, sediments, and sludges. *Arch Environ Contam Toxicol* 20(2):226-233. <https://doi.org/10.1007/bf01055908>.

8. REFERENCES

- Omanwar S, Fahim M. 2015. Mercury exposure and endothelial dysfunction: An interplay between nitric oxide and oxidative stress. *Int J Toxicol* 34(4):300-307. <https://doi.org/10.1177/1091581815589766>.
- Omanwar S, Saidullah B, Ravi K, et al. 2014. Vasorelaxant effects of mercury on rat thoracic aorta: the nitric oxide signaling mechanism. *Hum Exp Toxicol* 33(9):904-910. <https://doi.org/10.1177/0960327113512341>.
- Omata S, Sakimura K, Ishii T, et al. 1978. Chemical nature of a methylmercury complex with a low molecular weight in the liver cytosol of rats exposed to methylmercury chloride. *Biochem Pharmacol* 27(12):1700-1702.
- Omata S, Kasama H, Hasegawa H, et al. 1986. Species difference between rat and hamster in tissue accumulation of mercury after administration of methylmercury. *Arch Toxicol* 59(4):249-254.
- Ondovcik SL, Tamblyn L, McPherson JP, et al. 2012. Oxoguanine glycosylase 1 (OGG1) protects cells from DNA double-strand break damage following methylmercury (MeHg) exposure. *Toxicol Sci* 128(1):272-283. <https://doi.org/10.1093/toxsci/kfs138>.
- Onishchenko N, Karpova N, Sabri F, et al. 2008. Long-lasting depression-like behavior and epigenetic changes of BDNF gene expression induced by perinatal exposure to methylmercury. *J Neurochem* 106(3):1378-1387. <https://doi.org/10.1111/j.1471-4159.2008.05484.x>.
- Ontario Ministry of the Environment. 1991. Relationship of mercury levels in sportfish with lake sediment and water quality variables. Toronto, Ontario: Ontario Environmental Research Program. PIBS 1261. <https://archive.org/details/RELATIONSHIPOFME00WREN08121.ome/page/n1/mode/2up>. January 19, 2021.
- Orenstein ST, Thurston SW, Bellinger DC, et al. 2014. Prenatal organochlorine and methylmercury exposure and memory and learning in school-age children in communities near the New Bedford Harbor Superfund site, Massachusetts. *Environ Health Perspect* 122(11):1253-1259. <https://doi.org/10.1289/ehp.1307804>.
- Orlando MS, Dziorny AC, Harrington D, et al. 2014. Associations between prenatal and recent postnatal methylmercury exposure and auditory function at age 19 years in the Seychelles Child Development Study. *Neurotoxicol Teratol* 46:68-76. <https://doi.org/10.1016/j.ntt.2014.10.003>.
- Orlando MS, Love T, Harrington D, et al. 2023. The association of auditory function measures with low-level methylmercury from oceanic fish consumption and mercury vapor from amalgam: The Seychelles Child Development Study Nutrition 1 Cohort. *Neurotoxicology* 95:46-55. <https://doi.org/10.1016/j.neuro.2022.12.010>.
- Ortega HG, Lopez M, Salvaggio JE, et al. 1997a. Lymphocyte proliferative response and tissue distribution of methylmercury sulfide and chloride in exposed rats. *J Toxicol Environ Health* 50(6):605-616. <https://doi.org/10.1080/15287399709532058>.
- Ortega HG, Lopez M, Takaki A, et al. 1997b. Neuroimmunological effects of exposure to methylmercury forms in the Sprague-Dawley rats. Activation of the hypothalamic-pituitary-adrenal axis and lymphocyte responsiveness. *Toxicol Ind Health* 13(1):57-66. <https://doi.org/10.1177/074823379701300105>.
- OSHA. 2005. Memorandum: PEL for inorganic mercury. Occupational Safety and Health Administration. <https://www.osha.gov/laws-regs/standardinterpretations/1996-09-03-0>. November 19, 2020.
- OSHA. 2021a. Occupational safety and health standards. Subpart Z - Toxic and hazardous substances. Air contaminants. Table Z-1: Limits for air contaminants. Occupational Safety and Health Administration. Code of Federal Regulations. 29 CFR 1910.1000. <https://www.govinfo.gov/content/pkg/CFR-2021-title29-vol6/pdf/CFR-2021-title29-vol6-sec1910-1000.pdf>. August 28, 2022.
- OSHA. 2021b. Occupational safety and health standards for shipyard employment. Subpart Z - Toxic and hazardous substances. Air contaminants. Occupational Safety and Health Administration.

8. REFERENCES

- Code of Federal Regulations. 29 CFR 1915.1000. <https://www.govinfo.gov/content/pkg/CFR-2021-title29-vol7/pdf/CFR-2021-title29-vol7-sec1915-1000.pdf>. August 28, 2022.
- OSHA. 2021c. Safety and health regulations for construction. Subpart D - Occupational health and environment controls. Gases, vapors, fumes, dusts, and mists. Occupational Safety and Health Administration. Code of Federal Regulations. 29 CFR 1926.55. <https://www.govinfo.gov/content/pkg/CFR-2021-title29-vol8/pdf/CFR-2021-title29-vol8-sec1926-55.pdf>. August 28, 2022.
- Oskarsson A, Palminger Hallen I, Sundberg J. 1995. Exposure to toxic elements via breast milk. *Analyst* 120(3):765-770.
- Oskarsson A, Schütz A, Skerfving S, et al. 1996. Total and inorganic mercury in breast milk and blood in relation to fish consumption and amalgam fillings in lactating women. *Arch Environ Health* 51(3):234-241. <https://doi.org/10.1080/00039896.1996.9936021>.
- Osol A. 1980. Mercury. In: Remington's pharmaceutical sciences. 16th ed. Easton, PA: Mack Publishing Co., 1106.
- Ostlund K. 1969. Studies on the metabolism of methyl mercury and dimethyl mercury in mice. *Acta Pharmacol Toxicol (Copenh)* 27(1):5-132.
- Ou L, Chen L, Chen C, et al. 2014. Associations of methylmercury and inorganic mercury between human cord blood and maternal blood: a meta-analysis and its application. *Environ Pollut* 191:25-30. <https://doi.org/10.1016/j.envpol.2014.04.016>.
- Ou L, Chen C, Chen L, et al. 2015. Low-level prenatal mercury exposure in north China: an exploratory study of anthropometric effects. *Environ Sci Technol* 49(11):6899-6908. <https://doi.org/10.1021/es5055868>.
- Ou L, Wang H, Chen C, et al. 2018. Physiologically based pharmacokinetic (PBPK) modeling of human lactational transfer of methylmercury in China. *Environ Int* 115:180-187. <https://doi.org/10.1016/j.envint.2018.03.018>.
- Ouddane B, Monperrus M, Kadlecova M, et al. 2015. Mercury methylation and demethylation in highly contaminated sediments from the Deule River in Northern France using species-specific enriched stable isotopes. *Environ Sci Process Impacts* 17(1):145-155. <https://doi.org/10.1039/c4em00398e>.
- Oulhote Y, Shamim Z, Kielsen K, et al. 2017a. Children's white blood cell counts in relation to developmental exposures to methylmercury and persistent organic pollutants. *Reprod Toxicol* 68:207-214. <https://doi.org/10.1016/j.reprotox.2016.08.001>.
- Oulhote Y, Debes F, Vestergaard S, et al. 2017b. Aerobic fitness and neurocognitive function scores in young Faroese adults and potential modification by prenatal methylmercury exposure. *Environ Health Perspect* 125(4):677-683. <https://doi.org/10.1289/ehp274>.
- Oulhote Y, Coull B, Bind MA, et al. 2019. Joint and independent neurotoxic effects of early life exposures to a chemical mixture: A multi-pollutant approach combining ensemble learning and g-computation. *Environ Epidemiol* 3(5):e063. <https://doi.org/10.1097/ee9.0000000000000063>.
- Packull-McCormick S, Ashley-Martin J, Singh K, et al. 2023. Prenatal and concurrent blood mercury concentrations and associations with IQ in Canadian preschool children. *Environ Res* 233:116463. <https://doi.org/10.1016/j.envres.2023.116463>.
- Palumbo DR, Cox C, Davidson PW, et al. 2000. Association between prenatal exposure to methylmercury and cognitive functioning in Seychellois children: a reanalysis of the McCarthy Scales of Children's Ability from the main cohort study. *Environ Res* 84(2):81-88. <https://doi.org/10.1006/enrs.2000.4095>.
- Pamphlett R, Coote P. 1998. Entry of low doses of mercury vapor into the nervous system. *Neurotoxicology* 19(1):39-47.
- Pamphlett R, Kum-Jew S. 2001. Mercury vapor uptake into the nervous system of developing mice. *Neurotoxicol Teratol* 23(2):191-196.
- Pamphlett R, Kum Jew S. 2019. Mercury is taken up selectively by cells involved in joint, bone, and connective tissue disorders. *Front Med (Lausanne)* 6:168. <https://doi.org/10.3389/fmed.2019.00168>.

8. REFERENCES

- Pamphlett R, Kum Jew S, Cherepanoff S. 2019. Mercury in the retina and optic nerve following prenatal exposure to mercury vapor. *PLoS ONE* 14(8):e0220859. <https://doi.org/10.1371/journal.pone.0220859>.
- Pamphlett R, Bishop DP. 2022. Mercury is present in neurons and oligodendrocytes in regions of the brain affected by Parkinson's disease and co-localises with Lewy bodies. *PLoS ONE* 17(1):e0262464. <https://doi.org/10.1371/journal.pone.0262464>.
- Pan Z, Guo Y, Xiang H, et al. 2020. Effects of lead, mercury, and cadmium co-exposure on children's pulmonary function. *Biol Trace Elem Res* 194(1):115-120. <https://doi.org/10.1007/s12011-019-01772-w>.
- Pandalai SL, Morgan BW. 2011. Case files of the Emory University Medical Toxicology Fellowship: inhalational mercury toxicity from a traditional Vietnamese product. *J Med Toxicol* 7(4):295-305. <https://doi.org/10.1007/s13181-011-0180-4>.
- Papadopoulou E, Botton J, Caspersen IH, et al. 2021. Maternal seafood intake during pregnancy, prenatal mercury exposure and child body mass index trajectories up to 8 years. *Int J Epidemiol* 50(4):1134-1146. <https://doi.org/10.1093/ije/dyab035>.
- Papp A, Nagymajtenyi L, Vezer T. 2005. Subchronic mercury treatment of rats in different phases of ontogenesis: functional effects on the central and peripheral nervous system. *Food Chem Toxicol* 43(1):77-85. <https://doi.org/10.1016/j.fct.2004.08.014>.
- Parajuli RP, Goodrich JM, Chan LHM, et al. 2018. Genetic polymorphisms are associated with exposure biomarkers for metals and persistent organic pollutants among Inuit from the Inuvialuit Settlement Region, Canada. *Sci Total Environ* 634:569-578. <https://doi.org/10.1016/j.scitotenv.2018.03.331>.
- Park H, Kim K. 2011. Association of blood mercury concentrations with atopic dermatitis in adults: a population-based study in Korea. *Environ Res* 111(4):573-578. <https://doi.org/10.1016/j.envres.2011.02.003>.
- Park JD, Zheng W. 2012. Human exposure and health effects of inorganic and elemental mercury. *J Prev Med Public Health* 45(6):344-352. <https://doi.org/10.3961/jpmph.2012.45.6.344>.
- Park S, Lee BK. 2013. Body fat percentage and hemoglobin levels are related to blood lead, cadmium, and mercury concentrations in a Korean Adult Population (KNHANES 2008-2010). *Biol Trace Elem Res* 151(3):315-323. <https://doi.org/10.1007/s12011-012-9566-7>.
- Park S, Choi NK. 2016. Associations of blood heavy metal levels with intraocular pressure. *Ann Epidemiol* 26(8):546-550 e541. <https://doi.org/10.1016/j.annepidem.2016.07.002>.
- Park K, Seo E. 2017. Toenail mercury and dyslipidemia: Interaction with selenium. *J Trace Elem Med Biol* 39:43-49. <https://doi.org/10.1016/j.jtemb.2016.07.005>.
- Park J, Kim Y. 2021. Associations of blood heavy metals with uric acid in the Korean general population: analysis of data from the 2016-2017 Korean National Health and Nutrition Examination Survey. *Biol Trace Elem Res* 199(1):102-112. <https://doi.org/10.1007/s12011-020-02152-5>.
- Park IH, Park KM, Lee SS. 2010. Preparation and characterisation of divalent hard and soft metal (M = Ca, Co, Cu, Zn, Cd, Hg and Pb) complexes of 1,10-dithia-18-crown-6: structural versatility. *Dalton Trans* 39(40):9696-9704. <https://doi.org/10.1039/c0dt00696c>.
- Park SK, Lee S, Basu N, et al. 2013. Associations of blood and urinary mercury with hypertension in U.S. adults: the NHANES 2003-2006. *Environ Res* 123:25-32. <https://doi.org/10.1016/j.envres.2013.02.003>.
- Park JS, Ha KH, He K, et al. 2017. Association between blood mercury level and visceral adiposity in adults. *Diabetes Metab J* 41(2):113-120. <https://doi.org/10.4093/dmj.2017.41.2.113>.
- Park KC, Kim KS, Jung BS, et al. 2022. Hair methylmercury levels are inversely correlated with arterial stiffness. *Atherosclerosis* 357:14-19. <https://doi.org/10.1016/j.atherosclerosis.2022.08.003>.
- Parkin Kullmann JA, Pamphlett R. 2018. A comparison of mercury exposure from seafood consumption and dental amalgam fillings in people with and without amyotrophic lateral sclerosis (ALS): An international online case-control study. *Int J Environ Res Public Health* 15(12):2874. <https://doi.org/10.3390/ijerph15122874>.

8. REFERENCES

- Parks JM, Smith JC. 2016. Modeling mercury in proteins. *Methods Enzymol* 578:103-122. <https://doi.org/10.1016/bs.mie.2016.05.041>.
- Parks JW, Curry C, Romani D, et al. 1991. Young northern pike, yellow perch and crayfish as bioindicators in a mercury contaminated watercourse. *Environ Monit Assess* 16(1):39-73. <https://doi.org/10.1007/bf00399593>.
- Passos CJ, Da Silva DS, Lemire M, et al. 2008. Daily mercury intake in fish-eating populations in the Brazilian Amazon. *J Expo Sci Environ Epidemiol* 18(1):76-87. <https://doi.org/10.1038/sj.jes.7500599>.
- Pastor-Idoate S, Coco-Martin RM, Zabalza I, et al. 2021. Long-term visual pathway alterations after elemental mercury poisoning: report of a series of 29 cases. *J Occup Med Toxicol* 16(1):49. <https://doi.org/10.1186/s12995-021-00341-z>.
- Patel E, Reynolds M. 2013. Methylmercury impairs motor function in early development and induces oxidative stress in cerebellar granule cells. *Toxicol Lett* 222(3):265-272. <https://doi.org/10.1016/j.toxlet.2013.08.002>.
- Patel TA, Rao MV. 2015. Ameliorative effect of certain antioxidants against mercury induced genotoxicity in peripheral blood lymphocytes. *Drug Chem Toxicol* 38(4):408-414. <https://doi.org/10.3109/01480545.2014.975354>.
- Patel TA, Rao MV. 2018. Antigenotoxic effect of melatonin against mercuric chloride in human peripheral blood lymphocytes. *Toxicol Ind Health* 34(11):778-786. <https://doi.org/10.1177/0748233718795747>.
- Patel NB, Xu Y, McCandless LC, et al. 2019. Very low-level prenatal mercury exposure and behaviors in children: the HOME Study. *Environ Health* 18(1):4. <https://doi.org/10.1186/s12940-018-0443-5>.
- Pedersen GA, Mortensen GK, Larsen EH. 1994. Beverages as a source of toxic trace element intake. *Food Addit Contam* 11(3):351-363. <https://doi.org/10.1080/02652039409374234>.
- Penna S, Pocino M, Marval MJ, et al. 2009. Modifications in rat testicular morphology and increases in IFN-gamma serum levels by the oral administration of subtoxic doses of mercuric chloride. *Syst Biol Reprod Med* 55(2):69-84. <https://doi.org/10.1080/19396360802562678>.
- Perharic L, Shaw D, Colbridge M, et al. 1994. Toxicological problems resulting from exposure to traditional remedies and food supplements. *Drug Saf* 11(4):284-294. <https://doi.org/10.2165/00002018-199411040-00006>.
- Périard D, Beqiraj B, Hayoz D, et al. 2015. Associations of baroreflex sensitivity, heart rate variability, and initial orthostatic hypotension with prenatal and recent postnatal methylmercury exposure in the Seychelles Child Development Study at age 19 years. *Int J Environ Res Public Health* 12(3):3395-3405. <https://doi.org/10.3390/ijerph120303395>.
- Perry HM, Erlanger MW. 1974. Metal-induced hypertension following chronic feeding of low doses of cadmium and mercury. *J Lab Clin Med* 83(4):541-547.
- Pesch HJ, Bloss S, Schubert J, et al. 1992. The mercury, cadmium and lead content of cigarette tobacco: Comparative analytical-statistical studies in 1987 and 1991 employing Zeeman-AAS. *Fresenius J Anal Chem* 343(1):152-153. <https://doi.org/10.1007/bf00332087>.
- Peters S, Broberg K, Gallo V, et al. 2021. Blood metal levels and amyotrophic lateral sclerosis risk: a prospective cohort. *Ann Neurol* 89(1):125-133. <https://doi.org/10.1002/ana.25932>.
- Pettersson K, Dock L, Soderling K, et al. 1991. Distribution of mercury in rabbits subchronically exposed to low levels of radiolabeled methyl mercury. *Pharmacol Toxicol* 68(6):464-468.
- Petruccioli L, Turillazzi P. 1991. Effect of methylmercury on acetylcholinesterase and serum cholinesterase activity in monkeys, *Macaca fascicularis*. *Bull Environ Contam Toxicol* 46(5):769-773. <https://doi.org/10.1007/BF01689966>.
- Phelps RW, Clarkson TW, Kershaw TG, et al. 1980. Interrelationships of blood and hair mercury concentrations in a North American population exposed to methylmercury. *Arch Environ Health* 35(3):161-168.

8. REFERENCES

- Philibert A, Fillion M, Mergler D. 2020. Mercury exposure and premature mortality in the Grassy Narrows First Nation community: a retrospective longitudinal study. *Lancet Planet Health* 4(4):e141-e148. [https://doi.org/10.1016/s2542-5196\(20\)30057-7](https://doi.org/10.1016/s2542-5196(20)30057-7).
- Philibert A, Fillion M, Da Silva J, et al. 2022. Past mercury exposure and current symptoms of nervous system dysfunction in adults of a First Nation community (Canada). *Environ Health* 21(1):34. <https://doi.org/10.1186/s12940-022-00838-y>.
- Pierrehumbert G, Droz PO, Tardif R, et al. 2002. Impact of human variability on the biological monitoring of exposure to toluene, phenol, lead, and mercury: II. Compartmental based toxicokinetic modelling. *Toxicol Lett* 134(1-3):165-175. [https://doi.org/10.1016/s0378-4274\(02\)00186-8](https://doi.org/10.1016/s0378-4274(02)00186-8).
- Piikivi L. 1989. Cardiovascular reflexes and low long-term exposure to mercury vapour. *Int Arch Occup Environ Health* 61(6):391-395. <https://doi.org/10.1007/bf00381030>.
- Piikivi L, Hänninen H. 1989. Subjective symptoms and psychological performance of chlorine-alkali workers. *Scand J Work Environ Health* 15(1):69-74. <https://doi.org/10.5271/sjweh.1880>.
- Piikivi L, Ruokonen A. 1989. Renal function and long-term low mercury vapor exposure. *Arch Environ Health* 44(3):146-149. <https://doi.org/10.1080/00039896.1989.9935878>.
- Piikivi L, Hanninen H, Martelin T, et al. 1984. Psychological performance and long-term exposure to mercury vapors. *Scand J Work Environ Health* 10(1):35-41. <https://doi.org/10.5271/sjweh.2365>.
- Pilonis K, Tatum A, Gavalchin J. 2009. Gestational exposure to mercury leads to persistent changes in T-cell phenotype and function in adult DBF1 mice. *J Immunotoxicol* 6(3):161-170. <https://doi.org/10.1080/15476910903084021>.
- Pingree SD, Simmonds PL, Rummel KT, et al. 2001. Quantitative evaluation of urinary porphyrins as a measure of kidney mercury content and mercury body burden during prolonged methylmercury exposure in rats. *Toxicol Sci* 61(2):234-240.
- Piotrowski JK, Trojanowska B, Sapota A. 1974a. Binding of cadmium and mercury by metallothionein in the kidneys and liver of rats following repeated administration. *Arch Toxicol* 32(4):351-360. <https://doi.org/10.1007/bf00330118>.
- Piotrowski JK, Trojanowska B, Wisniewska-Knypl JM, et al. 1974b. Mercury binding in the kidney and liver of rats repeatedly exposed to mercuric chloride: induction of metallothionein by mercury and cadmium. *Toxicol Appl Pharmacol* 27(1):11-19. [https://doi.org/10.1016/0041-008x\(74\)90169-0](https://doi.org/10.1016/0041-008x(74)90169-0).
- Piotrowski JK, Szymanska JA, Skrzypinska-Gawrysiak M, et al. 1992. Intestinal absorption of inorganic mercury in rat. *Pharmacol Toxicol* 70(1):53-55.
- Polevoy C, Arbuckle TE, Oulhote Y, et al. 2020. Prenatal exposure to legacy contaminants and visual acuity in Canadian infants: a maternal-infant research on environmental chemicals study (MIREC-ID). *Environ Health* 19(1):14. <https://doi.org/10.1186/s12940-020-0567-2>.
- Pollack AZ, Schisterman EF, Goldman LR, et al. 2011. Cadmium, lead, and mercury in relation to reproductive hormones and anovulation in premenopausal women. *Environ Health Perspect* 119(8):1156-1161. <https://doi.org/10.1289/ehp.1003284>.
- Pollack AZ, Mumford SL, Wactawski-Wende J, et al. 2013. Bone mineral density and blood metals in premenopausal women. *Environ Res* 120:76-81. <https://doi.org/10.1016/j.envres.2012.06.001>.
- Pollack AZ, Mumford SL, Mendola P, et al. 2015. Kidney biomarkers associated with blood lead, mercury, and cadmium in premenopausal women: a prospective cohort study. *J Toxicol Environ Health A* 78(2):119-131. <https://doi.org/10.1080/15287394.2014.944680>.
- Poma K, Kirsch-Volders M, Susanne C. 1981. Mutagenicity study on mice given mercuric chloride. *J Appl Toxicol* 1(6):314-316. <https://doi.org/10.1002/jat.2550010609>.
- Ponce RA, Bloom NS. 1991. Effect of pH on the bioaccumulation of low level, dissolved methylmercury by rainbow trout (*Oncorhynchus mykiss*). *Water Air Soil Pollut* 56(0):631-640.
- Pope Q, Rand MD. 2021. Variation in methylmercury metabolism and elimination in humans: physiological pharmacokinetic modeling highlights the role of gut biotransformation, skeletal muscle, and hair. *Toxicol Sci* 180(1):26-37. <https://doi.org/10.1093/toxsci/kfaa192>.

8. REFERENCES

- Popescu HI, Negru L, Lancranjan I. 1979. Chromosome aberrations induced by occupational exposure to mercury. *Arch Environ Health* 34(6):461-463. <https://doi.org/10.1080/00039896.1979.10667450>.
- Porcella DB. 1994. Mercury in the environment: Biogeochemistry. In: Watras CJ, Huckabee JW, eds. *Mercury pollution integration and synthesis*. Boca Raton, FL: Lewis Publishers, 3-19.
- Poreba R, Skoczynska A, Gac P, et al. 2012. Left ventricular diastolic function in workers occupationally exposed to mercury vapour without clinical presentation of cardiac involvement. *Toxicol Appl Pharmacol* 263(3):368-373. <https://doi.org/10.1016/j.taap.2012.07.012>.
- Post EM, Yang MG, King JA, et al. 1973. Behavioral changes of young rats force-fed methyl mercury chloride. *Proc Soc Exp Biol Med* 143(4):1113-1116. <https://doi.org/10.3181/00379727-143-37480>.
- Pouzaud F, Ibbou A, Blanchemanche S, et al. 2010. Use of advanced cluster analysis to characterize fish consumption patterns and methylmercury dietary exposures from fish and other sea foods among pregnant women. *J Expo Sci Environ Epidemiol* 20(1):54-68. <https://doi.org/10.1038/jes.2009.2>.
- Purohit AR, Rao MV. 2014. Mitigative role of melatonin and alpha-tocopherol against mercury-induced genotoxicity. *Drug Chem Toxicol* 37(2):221-226. <https://doi.org/10.3109/01480545.2013.838774>.
- Puty B, Leão LKR, Crespo-Lopez ME, et al. 2019. Association between methylmercury environmental exposure and neurological disorders: A systematic review. *J Trace Elem Med Biol* 52:100-110. <https://doi.org/10.1016/j.jtemb.2018.12.001>.
- Pyle DM, Mather TA. 2003. The importance of volcanic emissions for the global atmospheric mercury cycle. *Atmos Environ* 37(36):5115-5124. <https://doi.org/10.1016/j.atmosenv.2003.07.011>.
- Rabenstein DL, Isab AA, Reid RS. 1982. A proton nuclear magnetic resonance study of the binding of methylmercury in human erythrocytes. *Biochim Biophys Acta* 720(1):53-64.
- Raeeshzadeh M, Moradi M, Ayar P, et al. 2021. The antioxidant effect of Medicago sativa L. (Alfalfa) ethanolic extract against mercury chloride (HgCl₂) toxicity in rat liver and kidney: An in vitro and in vivo study. *Evid Based Complement Alternat Med* 2021:8388002. <https://doi.org/10.1155/2021/8388002>.
- Rafiee A, Delgado-Saborit JM, Sly PD, et al. 2020. Environmental chronic exposure to metals and effects on attention and executive function in the general population. *Sci Total Environ* 705:135911. <https://doi.org/10.1016/j.scitotenv.2019.135911>.
- Raffee LA, Alawneh KZ, Alassaf RA, et al. 2021. Effects of elemental mercury vapor inhalation on arterial blood gases, lung histology, and interleukin-1 expression in pulmonary tissues of rats. *ScientificWorldJournal* 2021:4141383. <https://doi.org/10.1155/2021/4141383>.
- Rahola T, Aaran RK, Miettinen JK. 1972. Half-time studies of mercury and cadmium by whole-body counting. *Assess Radioactiv Contam March*:553-562.
- Rahola T, Hattula T, Korolainen A, et al. 1973. Elimination of free and protein-bound ionic mercury ²⁰³Hg²⁺ in man. *Ann Clin Res* 5(4):214-219.
- Rajae M, Sanchez BN, Renne EP, et al. 2015. An investigation of organic and inorganic mercury exposure and blood pressure in a small-scale gold mining community in Ghana. *Int J Environ Res Public Health* 12(8):10020-10038. <https://doi.org/10.3390/ijerph120810020>.
- Rajanna B, Hobson M. 1985. Influence of mercury on uptake of (3H)dopamine and (3H)norepinephrine by rat brain synaptosomes. *Toxicol Lett* 27:7-14.
- Ralston NVC, Raymond LJ. 2018. Mercury's neurotoxicity is characterized by its disruption of selenium biochemistry. *Biochim Biophys Acta Gen Subj* 1862:2405-2416. <https://doi.org/10.1016/j.bbagen.2018.05.009>.
- Ralston NV, Ralston CR, Blackwell JL, et al. 2008. Dietary and tissue selenium in relation to methylmercury toxicity. *Neurotoxicology* 29(5):802-811. <https://doi.org/10.1016/j.neuro.2008.07.007>.
- Ramalingam V, Vimaladevi V, Rajeswary S, et al. 2003. Effect of mercuric chloride on circulating hormones in adult albino rats. *J Environ Biol* 24(4):401-404.
- Ramelow GJ, Webre CL, Mueller CS, et al. 1989. Variations of heavy metals and arsenic in fish and other organisms from the Calcasieu River and Lake, Louisiana. *Arch Environ Contam Toxicol* 18(6):804-818. <https://doi.org/10.1007/bf01160294>.

8. REFERENCES

- Ramirez GB, Cruz MC, Pagulayan O, et al. 2000. The Tagum study I: analysis and clinical correlates of mercury in maternal and cord blood, breast milk, meconium, and infants' hair. *Pediatrics* 106(4):774-781.
- Ramirez GB, Pagulayan O, Akagi H, et al. 2003. Tagum study II: follow-up study at two years of age after prenatal exposure to mercury. *Pediatrics* 111(3):e289-295.
- Rand MD, Conrad K, Marvin E, et al. 2020. Developmental exposure to methylmercury and resultant muscle mercury accumulation and adult motor deficits in mice. *Neurotoxicology* 81:1-10. <https://doi.org/10.1016/j.neuro.2020.07.007>.
- Rao MV, Chinoy NJ, Suthar MB, et al. 2001. Role of ascorbic acid on mercuric chloride-induced genotoxicity in human blood cultures. *Toxicol in Vitro* 15(6):649-654.
- Rastogi SC. 1992. Cadmium, chromium, lead, and mercury residues in finger-paints and make-up paints. *Bull Environ Contam Toxicol* 48(2):289-294. <https://doi.org/10.1007/bf00194386>.
- Rastogi SC, Pritzl G. 1996. Migration of some toxic metals from crayons and water colors. *Bull Environ Contam Toxicol* 56(4):527-533. <https://doi.org/10.1007/s001289900076>.
- Raymond MR, Christensen KY, Thompson BA, et al. 2016. Associations between fish consumption and contaminant biomarkers with cardiovascular conditions among older male anglers in Wisconsin. *J Occup Environ Med* 58(7):676-682. <https://doi.org/10.1097/jom.0000000000000757>.
- Razzaghi H, Tinker SC, Crider K. 2014. Blood mercury concentrations in pregnant and nonpregnant women in the United States: National Health and Nutrition Examination Survey 1999-2006. *Am J Obstet Gynecol* 210(4):357 e351-357 e359. <https://doi.org/10.1016/j.ajog.2013.10.884>.
- Rees JR, Sturup S, Chen C, et al. 2007. Toenail mercury and dietary fish consumption. *J Expo Sci Environ Epidemiol* 17(1):25-30. <https://doi.org/10.1038/sj.jes.7500516>.
- Refsvik T. 1983. The mechanism of biliary excretion of methyl mercury: Methylthiols. *Acta Pharmacol Toxicol (Copenh)* 53(2):153-158.
- Refsvik T, Norseth T. 1975. Methyl mercuric compounds in rat bile. *Acta Pharmacol Toxicol (Copenh)* 36(1):67-78.
- Regencia ZJG, Dalmacion GV, Baja ES. 2022. Effect of heavy metals on ventricular repolarization and depolarization in the Metropolitan Manila Development Authority (MMDA) traffic enforcers' health study. *Arch Environ Occup Health* 77(2):87-95. <https://doi.org/10.1080/19338244.2020.1853017>.
- Regnell O, Tunlid A. 1991. Laboratory study of chemical speciation of mercury in lake sediment and water under aerobic and anaerobic conditions. *Appl Environ Microbiol* 57(3):789-795. <https://doi.org/10.1128/aem.57.3.789-795.1991>.
- Ren M, Zhao J, Wang B, et al. 2022. Associations between hair levels of trace elements and the risk of preterm birth among pregnant women: A prospective nested case-control study in Beijing Birth Cohort (BBC), China. *Environ Int* 158:106965. <https://doi.org/10.1016/j.envint.2021.106965>.
- Renzetti S, Cagna G, Calza S, et al. 2021. The effects of the exposure to neurotoxic elements on Italian schoolchildren behavior. *Sci Rep* 11(1):9898. <https://doi.org/10.1038/s41598-021-88969-z>.
- RePORTER. 2024. Mercury and mercury compounds. Research Portfolio Online Reporting Tools. National Institutes of Health. <https://reporter.nih.gov/>. March 14, 2024.
- Reuben A, Frischtak H, Berky A, et al. 2020. Elevated hair mercury levels are associated with neurodevelopmental deficits in children living near artisanal and small-scale gold mining in Peru. *Geohealth* 4(5):e2019GH000222. <https://doi.org/10.1029/2019gh000222>.
- Reuhl KR, Chang LW, Townsend JW. 1981a. Pathological effects of in utero methylmercury exposure on the cerebellum of the golden hamster (*Mesocricetus auratus*): 1. Early effects on the neonatal cerebellar cortex. *Environ Res* 26(2):281-306. [https://doi.org/10.1016/0013-9351\(81\)90205-x](https://doi.org/10.1016/0013-9351(81)90205-x).
- Reuhl KR, Chang LW, Townsend JW. 1981b. Pathological effects of in utero methylmercury exposure on the cerebellum of the golden hamster (*Mesocricetus auratus*): 2. Residual effects on the adult cerebellum. *Environ Res* 26(2):307-327. [https://doi.org/10.1016/0013-9351\(81\)90206-1](https://doi.org/10.1016/0013-9351(81)90206-1).
- Revis NW, Osborne TR, Holdsworth G, et al. 1989. Distribution of mercury species in soil from a mercury-contaminated site. *Water Air Soil Pollut* 45(1-2):105-114.

8. REFERENCES

- Revis NW, Osborne TR, Holdsworth G, et al. 1990. Mercury in soil: A method for assessing acceptable limits. *Arch Environ Contam Toxicol* 19(2):221-226.
- Rezaei M, Javadmoosavi SY, Mansouri B, et al. 2019. Thyroid dysfunction: how concentration of toxic and essential elements contribute to risk of hypothyroidism, hyperthyroidism, and thyroid cancer. *Environ Sci Pollut Res Int* 26(35):35787-35796. <https://doi.org/10.1007/s11356-019-06632-7>.
- Rezaei M, Blaszczyk M, Tinkov AA, et al. 2021. Relationship between gestational diabetes and serum trace element levels in pregnant women from Eastern Iran: a multivariate approach. *Environ Sci Pollut Res Int* 28(33):45230-45239. <https://doi.org/10.1007/s11356-021-13927-1>.
- Rhee J, Vance TM, Lim R, et al. 2020. Association of blood mercury levels with nonmelanoma skin cancer in the U.S.A. using National Health and Nutrition Examination Survey data (2003-2016). *Br J Dermatol* 183(3):480-487. <https://doi.org/10.1111/bjd.18797>.
- Ribeyre F, Boudou A, Maury-Brachet R. 1991. Multicompartment ecotoxicological models to study mercury bioaccumulation and transfer in freshwater systems. *Water Air Soil Pollut* 56(1):641-652. <https://doi.org/10.1007/bf00342306>.
- Rice DC. 1989a. Blood mercury concentrations following methyl mercury exposure in adult and infant monkeys. *Environ Res* 49(1):115-126. [https://doi.org/10.1016/s0013-9351\(89\)80026-x](https://doi.org/10.1016/s0013-9351(89)80026-x).
- Rice DC. 1989b. Brain and tissue levels of mercury after chronic methylmercury exposure in the monkey. *J Toxicol Environ Health* 27(2):189-198. <https://doi.org/10.1080/15287398909531290>.
- Rice DC. 1989c. Delayed neurotoxicity in monkeys exposed developmentally to methylmercury. *Neurotoxicology* 10(4):645-650.
- Rice DC. 1992. Effects of pre- plus postnatal exposure to methylmercury in the monkey on fixed interval and discrimination reversal performance. *Neurotoxicology* 13(2):443-452.
- Rice DC. 1998a. Age-related increase in auditory impairment in monkeys exposed in utero plus postnatally to methylmercury. *Toxicol Sci* 44(2):191-196. <https://doi.org/10.1006/toxs.1998.2487>.
- Rice DC. 1998b. Lack of effect of methylmercury exposure from birth to adulthood on information processing speed in the monkey. *Neurotoxicol Teratol* 20(3):275-283.
- Rice DC, Gilbert SG. 1982. Early chronic low-level methylmercury poisoning in monkeys impairs spatial vision. *Science* 216(4547):759-761. <https://doi.org/10.1126/science.7079739>.
- Rice DC, Gilbert SG. 1990. Effects of developmental exposure to methyl mercury on spatial and temporal visual function in monkeys. *Toxicol Appl Pharmacol* 102(1):151-163. [https://doi.org/10.1016/0041-008x\(90\)90092-9](https://doi.org/10.1016/0041-008x(90)90092-9).
- Rice DC, Gilbert SG. 1992. Exposure to methyl mercury from birth to adulthood impairs high-frequency hearing in monkeys. *Toxicol Appl Pharmacol* 115(1):6-10. [https://doi.org/10.1016/0041-008x\(92\)90361-u](https://doi.org/10.1016/0041-008x(92)90361-u).
- Rice DC, Hayward S. 1999. Comparison of visual function at adulthood and during aging in monkeys exposed to lead or methylmercury. *Neurotoxicology* 20(5):767-784.
- Rice DC, Krewski D, Collins BT, et al. 1989. Pharmacokinetics of methylmercury in the blood of monkeys (*Macaca fascicularis*). *Fundam Appl Toxicol* 12(1):23-33.
- Rice KM, Walker EM, Wu M, et al. 2014. Environmental mercury and its toxic effects. *J Prev Med Public Health* 47(2):74-83. <https://doi.org/10.3961/jpmph.2014.47.2.74>.
- Rieber M, Harris DP. 1994. Mercury pollution: The impact of U.S. government stockpile releases. In: Watras CJ, Huckabee JW, eds. *Mercury pollution integration and synthesis*. Boca Raton, FL: Lewis Publishers, 615-620.
- Riisgard HU, Hansen S. 1990. Biomagnification of mercury in a marine grazing food-chain: Algal cells *Phaeodactylum tricornutum*, mussels *Mytilus edulis* and flounders *Platichthys flesus* studied by means of a stepwise-reduction-CVAA method. *Mar Ecol Prog Ser* 62(3):259-270.
- Riley DM, Newby CA, Leal-Almeraz TO, et al. 2001. Assessing elemental mercury vapor exposure from cultural and religious practices. *Environ Health Perspect* 109(8):779-784. <https://doi.org/10.1289/ehp.01109779>.
- Riley DM, Newby CA, Leal-Almeraz TO. 2006. Incorporating ethnographic methods in multidisciplinary approaches to risk assessment and communication: cultural and religious uses of

8. REFERENCES

- mercury in Latino and Caribbean communities. *Risk Anal* 26(5):1205-1221. <https://doi.org/10.1111/j.1539-6924.2006.00809.x>.
- Risch MR, Gay DA, Fowler KK, et al. 2012. Spatial patterns and temporal trends in mercury concentrations, precipitation depths, and mercury wet deposition in the North American Great Lakes region, 2002-2008. *Environ Pollut* 161:261-271. <https://doi.org/10.1016/j.envpol.2011.05.030>.
- Risch MR, DeWild JF, Gay DA, et al. 2017. Atmospheric mercury deposition to forests in the eastern USA. *Environ Pollut* 228:8-18. <https://doi.org/10.1016/j.envpol.2017.05.004>.
- Ritchie KA, Gilmour WH, Macdonald EB, et al. 2002. Health and neuropsychological functioning of dentists exposed to mercury. *Occup Environ Med* 59(5):287-293. <https://doi.org/10.1136/oem.59.5.287>.
- Robinson JW, Skelly EM. 1983. The direct determination of mercury in sweat. *Spectrosc Lett* 16(2):133-150. <https://doi.org/10.1080/00387018308062329>.
- Robinson JF, Theunissen PT, van Dartel DA, et al. 2011. Comparison of MeHg-induced toxicogenomic responses across in vivo and in vitro models used in developmental toxicology. *Reprod Toxicol* 32(2):180-188. <https://doi.org/10.1016/j.reprotox.2011.05.011>.
- Rodier PM, Kates B, Simons R. 1988. Mercury localization in mouse kidney over time: Autoradiography versus silver staining. *Toxicol Appl Pharmacol* 92(2):235-245.
- Rodriguez LH, Rodriguez-Villamizar LA, Florez-Vargas O, et al. 2017. No effect of mercury exposure on kidney function during ongoing artisanal gold mining activities in Colombia. *Toxicol Ind Health* 33(1):67-78. <https://doi.org/10.1177/0748233716659031>.
- Rodríguez-Carrillo A, Mustieles V, D'Cruz SC, et al. 2022. Exploring the relationship between metal exposure, BDNF, and behavior in adolescent males. *Int J Hyg Environ Health* 239:113877. <https://doi.org/10.1016/j.ijheh.2021.113877>.
- Rodríguez-Viso P, Domene A, Vélez D, et al. 2023. Oral exposure to inorganic mercury or methylmercury elicits distinct pro-inflammatory and pro-oxidant intestinal responses in a mouse model system. *Food Chem Toxicol* 177:113801. <https://doi.org/10.1016/j.fct.2023.113801>.
- Roels H, Lauwerys R, Buchet JP, et al. 1982. Comparison of renal function and psychomotor performance in workers exposed to elemental mercury. *Int Arch Occup Environ Health* 50(1):77-93. <https://doi.org/10.1007/bf00432495>.
- Roels H, Abdeladim S, Ceulemans E, et al. 1987. Relationships between the concentrations of mercury in air and in blood or urine in workers exposed to mercury vapour. *Ann Occup Hyg* 31(2):135-145. <https://doi.org/10.1093/annhyg/31.2.135>.
- Rogers HS, McCullough J, Kieszak S, et al. 2007. Exposure assessment of young children living in Chicago communities with historic reports of ritualistic use of mercury. *Clin Toxicol* 45(3):240-247. <https://doi.org/10.1080/15563650601031643>.
- Roman HA, Walsh TL, Coull BA, et al. 2011. Evaluation of the cardiovascular effects of methylmercury exposures: current evidence supports development of a dose-response function for regulatory benefits analysis. *Environ Health Perspect* 119(5):607-614. <https://doi.org/10.1289/ehp.1003012>.
- Roman-Franco AA, Turiello M, Albini B, et al. 1978. Anti-basement membrane antibodies and antigen-antibody complexes in rabbits injected with mercuric chloride. *Clin Immunol Immunopathol* 9(4):464-481. [https://doi.org/10.1016/0090-1229\(78\)90143-5](https://doi.org/10.1016/0090-1229(78)90143-5).
- Roos PM, Dencker L. 2012. Mercury in the spinal cord after inhalation of mercury. *Basic Clin Pharmacol Toxicol* 111(2):126-132. <https://doi.org/10.1111/j.1742-7843.2012.00872.x>.
- Roos D, Seeger R, Puntel R, et al. 2012. Role of calcium and mitochondria in MeHg-mediated cytotoxicity. *J Biomed Biotechnol* 2012:1-15. <https://doi.org/10.1155/2012/248764>.
- Rosa-Silva HTD, Panzenhagen AC, Schmidt V, et al. 2020a. Hepatic and neurobiological effects of foetal and breastfeeding and adulthood exposure to methylmercury in Wistar rats. *Chemosphere* 244:125400. <https://doi.org/10.1016/j.chemosphere.2019.125400>.
- Rosa-Silva HTD, Panzenhagen AC, Espitia-Pérez P, et al. 2020b. Effects of foetal and breastfeeding exposure to methylmercury (MeHg) and retinol palmitate (Vitamin A) in rats: Redox parameters and

8. REFERENCES

- susceptibility to DNA damage in liver. *Mutat Res Genet Toxicol Environ Mutagen* 858-860:503239. <https://doi.org/10.1016/j.mrgentox.2020.503239>.
- Rossa-Roccor V, Karim ME. 2021. Are US adults with low-exposure to methylmercury at increased risk for depression? A study based on 2011-2016 National Health and Nutrition Examination Surveys (NHANES). *Int Arch Occup Environ Health* 94(3):419-431. <https://doi.org/10.1007/s00420-020-01592-9>.
- Rossi AD, Ahlbom E, Ogren SO, et al. 1997. Prenatal exposure to methylmercury alters locomotor activity of male but not female rats. *Exp Brain Res* 117(3):428-436. <https://doi.org/10.1007/s002210050237>.
- Rothenberg SE, Keiser S, Ajami NJ, et al. 2016a. The role of gut microbiota in fetal methylmercury exposure: Insights from a pilot study. *Toxicol Lett* 242:60-67. <https://doi.org/10.1016/j.toxlet.2015.11.022>.
- Rothenberg SE, Yu X, Liu J, et al. 2016b. Maternal methylmercury exposure through rice ingestion and offspring neurodevelopment: A prospective cohort study. *Int J Hyg Environ Health* 219(8):832-842. <https://doi.org/10.1016/j.ijheh.2016.07.014>.
- Rothenberg SE, Wagner CL, Hamidi B, et al. 2019. Longitudinal changes during pregnancy in gut microbiota and methylmercury biomarkers, and reversal of microbe-exposure correlations. *Environ Res* 172:700-712. <https://doi.org/10.1016/j.envres.2019.01.014>.
- Rothenberg SE, Korrick SA, Liu J, et al. 2021. Maternal methylmercury exposure through rice ingestion and child neurodevelopment in the first three years: a prospective cohort study in rural China. *Environ Health* 20(1):50. <https://doi.org/10.1186/s12940-021-00732-z>.
- Rowens B, Guerrero-Betancourt D, Gottlieb CA, et al. 1991. Respiratory failure and death following acute inhalation of mercury vapor. *Chest* 99(1):185-190. <https://doi.org/10.1378/chest.99.1.185>.
- Rowland IR, Davies MJ, Grasso P. 1975a. The methylation of mercury by the gastro-intestinal contents of the rat. *Biochem Soc Trans* 3(4):502-504.
- Rowland IR, Grasso P, Davies MJ. 1975b. The methylation of mercuric chloride by human intestinal bacteria. *Experientia* 31(9):1064-1065.
- Rozalski M, Wierzbicki R. 1983. Effect of mercuric chloride on cultured rat fibroblasts: survival, protein biosynthesis and binding of mercury to chromatin. *Biochem Pharmacol* 32(13):2124-2126.
- Rozgaj R, Kasuba V, Blanusa M. 2005. Mercury chloride genotoxicity in rats following oral exposure, evaluated by comet assay and micronucleus test. *Arh Hig Rada Toksikol* 56(1):9-15.
- RTECS. 1997. Mercury. Registry of Toxic Effects of Chemical Substances, Micromedex, Inc.
- Ruiz P, Ray M, Fisher J, et al. 2011. Development of a human physiologically based pharmacokinetic (PBPK) toolkit for environmental pollutants. *Int J Mol Sci* 12(11):7469-7480. <https://doi.org/10.3390/ijms12117469>.
- Rule JH, Iwashchenko MS. 1998. Mercury concentrations in soils adjacent to a former chlor-alkali plant. *J Environ Qual* 27(1):31-37.
- Rumbold DG, Lienhardt CT, Parsons ML. 2018. Mercury biomagnification through a coral reef ecosystem. *Arch Environ Contam Toxicol* 75(1):121-133. <https://doi.org/10.1007/s00244-018-0523-0>.
- Ruus A, Overjordet IB, Braaten HF, et al. 2015. Methylmercury biomagnification in an Arctic pelagic food web. *Environ Toxicol Chem* 34(11):2636-2643. <https://doi.org/10.1002/etc.3143>.
- Ryan L. 2008. Combining data from multiple sources, with applications to environmental risk assessment. *Stat Med* 27(5):698-710. <https://doi.org/10.1002/sim.3053>.
- Ryu J, Ha EH, Kim BN, et al. 2017. Associations of prenatal and early childhood mercury exposure with autistic behaviors at 5 years of age: The Mothers and Children's Environmental Health (MOCEH) study. *Sci Total Environ* 605-606:251-257. <https://doi.org/10.1016/j.scitotenv.2017.06.227>.
- Sabir S, Saleem U, Akash MSH, et al. 2022. Thymoquinone induces Nrf2 mediated adaptive homeostasis: implication for mercuric chloride-induced nephrotoxicity. *ACS Omega* 7(8):7370-7379. <https://doi.org/10.1021/acsomega.2c00028>.

8. REFERENCES

- Sager PR, Doherty RA, Olmsted JB. 1983. Interaction of methylmercury with microtubules in cultured cells and in vitro. *Exp Cell Res* 146(1):127-137.
- Sagiv SK, Thurston SW, Bellinger DC, et al. 2012. Prenatal exposure to mercury and fish consumption during pregnancy and attention-deficit/hyperactivity disorder-related behavior in children. *Arch Pediatr Adolesc Med* 166(12):1123-1131. <https://doi.org/10.1001/archpediatrics.2012.1286>.
- Saint-Amour D, Roy MS, Bastien C, et al. 2006. Alterations of visual evoked potentials in preschool Inuit children exposed to methylmercury and polychlorinated biphenyls from a marine diet. *Neurotoxicology* 27(4):567-578. <https://doi.org/10.1016/j.neuro.2006.02.008>.
- Saito H, Sekikawa T, Taguchi J, et al. 2020. Prenatal and postnatal methyl mercury exposure in Niigata, Japan: adult outcomes. *Neurotoxicology* 81:364-372. <https://doi.org/10.1016/j.neuro.2020.09.031>.
- Sakamoto M, Kakita A, Wakabayashi K, et al. 2002. Evaluation of changes in methylmercury accumulation in the developing rat brain and its effects: a study with consecutive and moderate dose exposure throughout gestation and lactation periods. *Brain Res* 949(1-2):51-59. [https://doi.org/10.1016/s0006-8993\(02\)02964-5](https://doi.org/10.1016/s0006-8993(02)02964-5).
- Sakamoto M, Kakita A, de Oliveira RB, et al. 2004. Dose-dependent effects of methylmercury administered during neonatal brain spurt in rats. *Brain Res Dev Brain Res* 152(2):171-176. <https://doi.org/10.1016/j.devbrainres.2004.06.016>.
- Sakamoto M, Kaneoka T, Murata K, et al. 2007. Correlations between mercury concentrations in umbilical cord tissue and other biomarkers of fetal exposure to methylmercury in the Japanese population. *Environ Res* 103(1):106-111. <https://doi.org/10.1016/j.envres.2006.03.004>.
- Sakamoto M, Kubota M, Murata K, et al. 2008. Changes in mercury concentrations of segmental maternal hair during gestation and their correlations with other biomarkers of fetal exposure to methylmercury in the Japanese population. *Environ Res* 106(2):270-276. <https://doi.org/10.1016/j.envres.2007.10.002>.
- Sakamoto M, Yasutake A, Domingo JL, et al. 2013. Relationships between trace element concentrations in chorionic tissue of placenta and umbilical cord tissue: potential use as indicators for prenatal exposure. *Environ Int* 60:106-111. <https://doi.org/10.1016/j.envint.2013.08.007>.
- Sakamoto M, Chan HM, Domingo JL, et al. 2015. Significance of fingernail and toenail mercury concentrations as biomarkers for prenatal methylmercury exposure in relation to segmental hair mercury concentrations. *Environ Res* 136:289-294. <https://doi.org/10.1016/j.envres.2014.09.034>.
- Sakamoto M, Murata K, Domingo JL, et al. 2016. Implications of mercury concentrations in umbilical cord tissue in relation to maternal hair segments as biomarkers for prenatal exposure to methylmercury. *Environ Res* 149:282-287. <https://doi.org/10.1016/j.envres.2016.04.023>.
- Sakamoto M, Kakita A, Domingo JL, et al. 2017. Stable and episodic/bolus patterns of methylmercury exposure on mercury accumulation and histopathologic alterations in the nervous system. *Environ Res* 152:446-453. <https://doi.org/10.1016/j.envres.2016.06.034>.
- Sakamoto M, Chan HM, Domingo JL, et al. 2018. Placental transfer and levels of mercury, selenium, vitamin E, and docosahexaenoic acid in maternal and umbilical cord blood. *Environ Int* 111:309-315. <https://doi.org/10.1016/j.envint.2017.11.001>.
- Sakamoto M, Kakita A, Sakai K, et al. 2020. Methylmercury exposure during the vulnerable window of the cerebrum in postnatal developing rats. *Environ Res* 188:109776. <https://doi.org/10.1016/j.envres.2020.109776>.
- Salazar-Camacho C, Salas-Moreno M, Paternina-Urbe R, et al. 2021. Mercury species in fish from a tropical river highly impacted by gold mining at the Colombian Pacific region. *Chemosphere* 264(Pt 2):128478. <https://doi.org/10.1016/j.chemosphere.2020.128478>.
- Sallsten G, Barregard L, Schutz A. 1994. Clearance half life of mercury in urine after the cessation of long term occupational exposure: influence of a chelating agent (DMPS) on excretion of mercury in urine. *Occup Environ Med* 51(5):337-342. <https://doi.org/10.1136/oem.51.5.337>.
- Salonen JT, Seppanen K, Nyyssonen K, et al. 1995. Intake of mercury from fish, lipid peroxidation, and the risk of myocardial infarction and coronary, cardiovascular, and any death in eastern Finnish men. *Circulation* 91(3):645-655. <https://doi.org/10.1161/01.cir.91.3.645>.

8. REFERENCES

- Salonen JT, Seppanen K, Lakka TA, et al. 2000. Mercury accumulation and accelerated progression of carotid atherosclerosis: a population-based prospective 4-year follow-up study in men in eastern Finland. *Atherosclerosis* 148(2):265-273. [https://doi.org/10.1016/s0021-9150\(99\)00272-5](https://doi.org/10.1016/s0021-9150(99)00272-5).
- Samudralwar DL, Garg AN. 1996. Minor and trace elemental determination in the Indian herbal and other medicinal preparations. *Biol Trace Elem Res* 54(2):113-121. <https://doi.org/10.1007/bf02786258>.
- Sanchez Rodriguez LH, Florez-Vargas O, Rodriguez-Villamizar LA, et al. 2015. Lack of autoantibody induction by mercury exposure in artisanal gold mining settings in Colombia: Findings and a review of the epidemiology literature. *J Immunotoxicol* 12(4):368-375. <https://doi.org/10.3109/1547691x.2014.986591>.
- Sandborgh-Englund G, Elinder CG, Johanson G, et al. 1998. The absorption, blood levels, and excretion of mercury after a single dose of mercury vapor in humans. *Toxicol Appl Pharmacol* 150(1):146-153. <https://doi.org/10.1006/taap.1998.8400>.
- Sandborgh-Englund G, Ask K, Belfrage E, et al. 2001. Mercury exposure in utero and during infancy. *J Toxicol Environ Health A* 63(5):317-320. <https://doi.org/10.1080/15287390152103634>.
- Sandborgh-Englund G, Einarsson C, Sandstrom M, et al. 2004. Gastrointestinal absorption of metallic mercury. *Arch Environ Health* 59(9):449-454. <https://doi.org/10.1080/00039890409603424>.
- Sanders AP, Mazzella MJ, Malin AJ, et al. 2019. Combined exposure to lead, cadmium, mercury, and arsenic and kidney health in adolescents age 12-19 in NHANES 2009-2014. *Environ Int* 131:104993. <https://doi.org/10.1016/j.envint.2019.104993>.
- Sanga RN, Bartell SM, Ponce RA, et al. 2001. Effects of uncertainties on exposure estimates to methylmercury: a Monte Carlo analysis of exposure biomarkers versus dietary recall estimation. *Risk Anal* 21(5):859-868. <https://doi.org/10.1111/0272-4332.215157>.
- Santana L, Bittencourt LO, Nascimento PC, et al. 2019. Low doses of methylmercury exposure during adulthood in rats display oxidative stress, neurodegeneration in the motor cortex and lead to impairment of motor skills. *J Trace Elem Med Biol* 51:19-27. <https://doi.org/10.1016/j.jtemb.2018.09.004>.
- Sapin C, Druet E, Druet P. 1977. Induction of anti-glomerular basement membrane antibodies in the Brown-Norway rat by mercuric chloride. *Clin Exp Immunol* 28(1):173-179.
- Sartorelli P, Montomoli L, Sisinni AG, et al. 2003. Percutaneous penetration of inorganic mercury from soil: an in vitro study. *Bull Environ Contam Toxicol* 71(6):1091-1099.
- Sarzo B, Ballester F, Soler-Blasco R, et al. 2022. Pre and postnatal exposure to mercury and sexual development in 9-year-old children in Spain: The role of brain-derived neurotrophic factor. *Environ Res* 213:113620. <https://doi.org/10.1016/j.envres.2022.113620>.
- Satoh H, Hursh JB, Clarkson TW, et al. 1981. Selective determination of elemental mercury in blood and urine exposed to mercury vapor in vitro. *J Appl Toxicol* 1(3):177-181. <https://doi.org/10.1002/jat.2550010309>.
- Sawyer J. 2015. Hartford man had skeletal remains in apartment for religious reasons: PD. NBC Connecticut. <https://www.nbcconnecticut.com/news/local/Skeletal-Remains-of-Five-Bodies-Stolen-From-Massachusetts-Cemetery-Found-in-Hartford-Apartment-Police-360669131.html>. May 17, 2021.
- Schiffer L, Barnard L, Baranowski ES, et al. 2019. Human steroid biosynthesis, metabolism and excretion are differentially reflected by serum and urine steroid metabolomes: A comprehensive review. *J Steroid Biochem Mol Biol* 194:1-25. <https://doi.org/10.1016/j.jsbmb.2019.105439>.
- Schiønning JD, Larsen JO, Eide R. 1998a. A stereological study of dorsal root ganglion cells and nerve root fibers from rats exposed to mercury vapor. *Acta Neuropathol (Berl)* 96(2):185-190. <https://doi.org/10.1007/s004010050880>.
- Schiønning JD, Larsen JO, Tandrup T, et al. 1998b. Selective degeneration of dorsal root ganglia and dorsal nerve roots in methyl mercury-intoxicated rats: a stereological study. *Acta Neuropathol (Berl)* 96(2):191-201.

8. REFERENCES

- Schmid K, Sassen A, Staudenmaier R, et al. 2007. Mercuric dichloride induces DNA damage in human salivary gland tissue cells and lymphocytes. *Arch Toxicol* 81(11):759-767. <https://doi.org/10.1007/s00204-007-0208-3>.
- Schroeder WH, Fanaki FH. 1988. Field measurements of water-air exchange of mercury in freshwater systems. *Environ Technol Lett* 9(5):369-374. <https://doi.org/10.1080/09593338809384579>.
- Schumacher L, Abbott LC. 2017. Effects of methyl mercury exposure on pancreatic beta cell development and function. *J Appl Toxicol* 37(1):4-12. <https://doi.org/10.1002/jat.3381>.
- Schurz F, Sabater-Vilar M, Fink-Gremmels J. 2000. Mutagenicity of mercury chloride and mechanisms of cellular defence: The role of metal-binding proteins. *Mutagenesis* 15(6):525-530.
- Schuster E. 1991. The behavior of mercury in the soil with special emphasis on complexation and adsorption processes - A review of the literature. *Water Air Soil Pollut* 56(1):667-680. <https://doi.org/10.1007/bf00342308>.
- Schuurs AH. 1999. Reproductive toxicity of occupational mercury. A review of the literature. *J Dent* 27(4):249-256.
- Sears ME, Kerr KJ, Bray RI. 2012. Arsenic, cadmium, lead, and mercury in sweat: A systematic review. *J Environ Public Health* 2012:1-10. <https://doi.org/10.1155/2012/184745>.
- Seki N, Akiyama M, Yamakawa H, et al. 2021. Adverse effects of methylmercury on gut bacteria and accelerated accumulation of mercury in organs due to disruption of gut microbiota. *J Toxicol Sci* 46(2):91-97. <https://doi.org/10.2131/jts.46.91>.
- Sell JL, Davison KL. 1975. Metabolism of mercury, administered as methylmercuric chloride or mercuric chloride, by lactating ruminants. *J Agric Food Chem* 23(4):803-808.
- SERDP. 2014 Bioavailability and methylation potential of mercury sulfides in sediments. Alexandria, VA: Strategic Environmental Research and Development Program. ER1744.
- Shaheen SO, Newson RB, Henderson AJ, et al. 2004. Umbilical cord trace elements and minerals and risk of early childhood wheezing and eczema. *Eur Respir J* 24(2):292-297. <https://doi.org/10.1183/09031936.04.00117803>.
- Shah-Kulkarni S, Lee S, Jeong KS, et al. 2020. Prenatal exposure to mixtures of heavy metals and neurodevelopment in infants at 6 months. *Environ Res* 182:109122. <https://doi.org/10.1016/j.envres.2020.109122>.
- Shamalaye C, Davidson PW, Myers GJ. 2004. The Seychelles Child Development Study: Two decades of collaboration. *Seychelles Med Dent J* 7(1):92-99.
- Shapiro AM, Chan HM. 2008. Characterization of demethylation of methylmercury in cultured astrocytes. *Chemosphere* 74(1):112-118. <https://doi.org/10.1016/j.chemosphere.2008.09.019>.
- Shen Y, Laue HE, Shrubsole MJ, et al. 2022. Associations of childhood and perinatal blood metals with children's gut microbiomes in a Canadian gestation cohort. *Environ Health Perspect* 130(1):17007. <https://doi.org/10.1289/EHP9674>.
- Shen L, Liang C, Li D, et al. 2023. The association between exposure to multiple toxic metals and the risk of endometriosis: Evidence from the results of blood and follicular fluid. *Sci Total Environ* 855:158882. <https://doi.org/10.1016/j.scitotenv.2022.158882>.
- Shenker BJ, Maserejian NN, Zhang A, et al. 2008. Immune function effects of dental amalgam in children: a randomized clinical trial. *J Am Dent Assoc* 139(11):1496-1505. <https://doi.org/10.14219/jada.archive.2008.0076>.
- Sherlock JC, Lindsay DG, Evans WH, et al. 1982. Duplication diet study on mercury intake by fish consumers in the UK. *Arch Environ Health* 37(5):271-278.
- Sherlock J, Hislop J, Newton D, et al. 1984. Elevation of mercury in human blood from controlled chronic ingestion of methylmercury in fish. *Hum Toxicol* 3(2):117-131.
- Sherman LS, Blum JD, Franzblau A, et al. 2013. New insight into biomarkers of human mercury exposure using naturally occurring mercury stable isotopes. *Environ Sci Technol* 47(7):3403-3409. <https://doi.org/10.1021/es305250z>.
- Shi CY, Lane AT, Clarkson TW. 1990. Uptake of mercury by the hair of methylmercury-treated newborn mice. *Environ Res* 51(2):170-181.

8. REFERENCES

- Shi X, Chan CPS, Man GKY, et al. 2021. Associations between blood metal/ metalloids concentration and human semen quality and sperm function: A cross-sectional study in Hong Kong. *J Trace Elem Med Biol* 65:126735. <https://doi.org/10.1016/j.jtemb.2021.126735>.
- Shimada A, Yamamoto E, Morita T, et al. 2004. Ultrastructural demonstration of mercury granules in the placenta of metallothionein-null pregnant mice after exposure to mercury vapor. *Toxicol Pathol* 32(5):519-526. <https://doi.org/10.1080/01926230490496302>.
- Shin YY, Ryu IK, Park MJ, et al. 2018. The association of total blood mercury levels and overweight among Korean adolescents: analysis of the Korean National Health and Nutrition Examination Survey (KNHANES) 2010-2013. *Korean J Pediatr* 61(4):121-128. <https://doi.org/10.3345/kjp.2018.61.4.121>.
- Shinoda Y, Ehara S, Tatsumi S, et al. 2019. Methylmercury-induced neural degeneration in rat dorsal root ganglion is associated with the accumulation of microglia/macrophages and the proliferation of Schwann cells. *J Toxicol Sci* 44(3):191-199. <https://doi.org/10.2131/jts.44.191>.
- Shipp AM, Gentry PR, Lawrence G, et al. 2000. Determination of a site-specific reference dose for methylmercury for fish-eating populations. *Toxicol Ind Health* 16(9-10):335-438. <https://doi.org/10.1177/074823370001600901>.
- Siblerud RL. 1990. The relationship between mercury from dental amalgam and the cardiovascular system. *Sci Total Environ* 99(1-2):23-35. [https://doi.org/10.1016/0048-9697\(90\)90207-b](https://doi.org/10.1016/0048-9697(90)90207-b).
- Siegler RW, Nierenberg DW, Hickey WF. 1999. Fatal poisoning from liquid dimethylmercury: A neuropathologic study. *Hum Pathol* 30(6):720-723.
- Signes-Pastor AJ, Desai G, García-Villarino M, et al. 2021. Exposure to a mixture of metals and growth indicators in 6-11-year-old children from the 2013-16 NHANES. *Expo Health* 13(2):173-184. <https://doi.org/10.1007/s12403-020-00371-8>.
- Silbergeld EK, Silva IA, Nyland JF. 2005. Mercury and autoimmunity: Implications for occupational and environmental health. *Toxicol Appl Pharmacol* 207(2 Suppl):282-292. <https://doi.org/10.1016/j.taap.2004.11.035>.
- Silva JL, Leocádio PCL, Reis JM, et al. 2021. Oral methylmercury intoxication aggravates cardiovascular risk factors and accelerates atherosclerosis lesion development in ApoE knockout and C57BL/6 mice. *Toxicol Res* 37(3):311-321. <https://doi.org/10.1007/s43188-020-00066-x>.
- Silva MCD, Oliveira RAA, Vasconcellos ACS, et al. 2023. Chronic mercury exposure and GSTP1 polymorphism in Mundurucu indigenous from Brazilian Amazon. *Toxics* 11(2):138. <https://doi.org/10.3390/toxics11020138>.
- Simmons-Willis TA, Koh AS, Clarkson TW, et al. 2002. Transport of a neurotoxicant by molecular mimicry: the methylmercury-L-cysteine complex is a substrate for human L-type large neutral amino acid transporter (LAT) 1 and LAT2. *Biochem J* 367(Pt 1):239-246. <https://doi.org/10.1042/bj20020841>.
- Sin YM, Teh WF. 1992. Effect of long-term uptake of mercuric sulphide on thyroid hormones and glutathione in mice. *Bull Environ Contam Toxicol* 49(6):847-854. <https://doi.org/10.1007/BF00203157>.
- Sin YM, Lim YF, Wong MK. 1983. Uptake and distribution in mice from ingesting soluble and insoluble mercury compounds. *Bull Environ Contam Toxicol* 31(5):605-612.
- Sin YM, Teh WF, Wong MK. 1989. Absorption of mercuric chloride and mercuric sulphide and their possible effects on tissue glutathione in mice. *Bull Environ Contam Toxicol* 42(2):307-314.
- Sin YM, Teh WF, Wong MK, et al. 1990. Effect of mercury on glutathione and thyroid hormones. *Bull Environ Contam Toxicol* 44(4):616-622. <https://doi.org/10.1007/BF01700885>.
- Sirivarasai J, Chaisungnern K, Panpunuan P, et al. 2021. Role of MT1A polymorphism and environmental mercury exposure on the Montreal Cognitive Assessment (MoCA). *Neuropsychiatr Dis Treat* 17:2429-2439. <https://doi.org/10.2147/ndt.S320374>.
- Sirotnik V, Guerin T, Mauras Y, et al. 2008. Methylmercury exposure assessment using dietary and biomarker data among frequent seafood consumers in France CALIPSO study. *Environ Res* 107(1):30-38. <https://doi.org/10.1016/j.envres.2007.12.005>.

8. REFERENCES

- Sitarek K, Gralewicz S. 2009. Early developmental effects of separate or combined perinatal exposure to methylmercury (MeHg) and 2,2',4,4',5,5'-hexachlorobiphenyl (PCB 153) in the rat. *Int J Occup Med Environ Health* 22(2):89-105. <https://doi.org/10.2478/v10001-009-0015-6>.
- Sizmur T, O'Driscoll N, Cai Y. 2018. JES Special issue in mercury biogeochemistry and fate. *J Environ Sci (China)* 68:1-4. <https://doi.org/10.1016/j.jes.2018.05.020>.
- Skerfving S, Hansson K, Lindsten J. 1970. Chromosome breakage in humans exposed to methyl mercury through fish consumption. *Arch Environ Health* 21:133-139.
- Skerfving S, Hansson K, Mangs C, et al. 1974. Methylmercury-induced chromosome damage in man. *Environ Res* 7(1):83-98.
- Skogheim TS, Weyde KVF, Engel SM, et al. 2021. Metal and essential element concentrations during pregnancy and associations with autism spectrum disorder and attention-deficit/hyperactivity disorder in children. *Environ Int* 152:106468. <https://doi.org/10.1016/j.envint.2021.106468>.
- Skoglund A, Egelrud T. 1991. Hypersensitivity reactions to dental materials in patients with lichenoid oral mucosal lesions and in patients with burning mouth syndrome. *Scand J Dent Res* 99(4):320-328. <https://doi.org/10.1111/j.1600-0722.1991.tb01035.x>.
- Skowronski GA, Turkall RM, Abdel-Rahman MS. 2000. In vitro penetration of soil-aged mercury through pig skin. *J Toxicol Environ Health A* 61(3):189-200.
- Skröder H, Kippler M, Tofail F, et al. 2017. Early-life selenium status and cognitive function at 5 and 10 years of age in Bangladeshi children. *Environ Health Perspect* 125(11):1-13. <https://doi.org/10.1289/ehp1691>.
- Sletvold H, Svendsen K, Aas O, et al. 2012. Neuropsychological function and past exposure to metallic mercury in female dental workers. *Scand J Psychol* 53(2):136-143. <https://doi.org/10.1111/j.1467-9450.2011.00929.x>.
- Smith TG, Armstrong FAJ. 1975. Mercury in seals, terrestrial carnivores, and principal food items of the Inuit, from Holman, N.W.T. *J Fish Res Board Can* 32(6):795-802.
- Smith TG, Armstrong FAJ. 1978. Mercury and selenium in ringed and bearded seal tissues from Arctic Canada. *J Arctic Inst North Am* 31(2):75-84.
- Smith PJ, Langolf GD, Goldberg J. 1983. Effects of occupational exposure to elemental mercury on short term memory. *Br J Ind Med* 40(4):413-419.
- Smith JC, Allen PV, Turner MD, et al. 1994. The kinetics of intravenously administered methyl mercury in man. *Toxicol Appl Pharmacol* 128(2):251-256. <https://doi.org/10.1006/taap.1994.1204>.
- Smith KM, Barraj LM, Kantor M, et al. 2009. Relationship between fish intake, n-3 fatty acids, mercury and risk markers of CHD (National Health and Nutrition Examination Survey 1999-2002). *Public Health Nutr* 12(8):1261-1269. <https://doi.org/10.1017/s1368980008003844>.
- Snapp KR, Boyer DB, Peterson LC, et al. 1989. The contribution of dental amalgam to mercury in blood. *J Dent Res* 68(5):780-785. <https://doi.org/10.1177/00220345890680050501>.
- Snoj Tratnik J, Falnoga I, Trdin A, et al. 2017. Prenatal mercury exposure, neurodevelopment and apolipoprotein E genetic polymorphism. *Environ Res* 152:375-385. <https://doi.org/10.1016/j.envres.2016.08.035>.
- Sohn SH, Heo HC, Jo S, et al. 2020. The association between mercury concentrations and lipid profiles in the Korean National Environmental Health Survey (KoNEHS) cycle 3. *Ann Occup Environ Med* 32:e19. <https://doi.org/10.35371/aoem.2020.32.e19>.
- Soldin OP, O'Mara DM, Aschner M. 2008. Thyroid hormones and methylmercury toxicity. *Biol Trace Elem Res* 126(1-3):1-12. <https://doi.org/10.1007/s12011-008-8199-3>.
- Solecki R, Hothorn L, Holzweissig M, et al. 1991. Computerised analysis of pathological findings in longterm trials with phenylmercuric acetate in rats. *Arch Toxicol Suppl* 14:100-103. https://doi.org/10.1007/978-3-642-74936-0_21.
- Somers EC, Ganser MA, Warren JS, et al. 2015. Mercury exposure and antinuclear antibodies among females of reproductive age in the United States: NHANES. *Environ Health Perspect* 123(8):792-798. <https://doi.org/10.1289/ehp.1408751>.

8. REFERENCES

- Sommar JN, Svensson MK, Bjor BM, et al. 2013. End-stage renal disease and low level exposure to lead, cadmium and mercury; a population-based, prospective nested case-referent study in Sweden. *Environ Health* 12:9. <https://doi.org/10.1186/1476-069x-12-9>.
- Son HY, Lee S, Park SB, et al. 2010. Toxic effects of mercuric sulfide on immune organs in mice. *Immunopharmacol Immunotoxicol* 32(2):277-283. <https://doi.org/10.3109/08923970903305499>.
- Song JW, Choi BS. 2013. Mercury induced the accumulation of amyloid beta (abeta) in PC12 cells: The role of production and degradation of abeta. *Toxicol Res* 29(4):235-240. <https://doi.org/10.5487/tr.2013.29.4.235>.
- Song KB, Lee YE, Jeong SH, et al. 2002. Mercury distribution and concentration in rats fed powdered dental amalgam. *Arch Oral Biol* 47(4):307-313.
- Sørensen N, Murata K, Budtz-Jorgensen E, et al. 1999. Prenatal methylmercury exposure as a cardiovascular risk factor at seven years of age. *Epidemiology* 10(4):370-375.
- Sørensen FW, Larsen JO, Eide R, et al. 2000. Neuron loss in cerebellar cortex of rats exposed to mercury vapor: A stereological study. *Acta Neuropathol (Berl)* 100(1):95-100. <https://doi.org/10.1007/s004010051198>.
- Spencer JN, Voigt AF. 1968. Thermodynamics of the solution of mercury metal. I. Tracer determination of the solubility in various liquids. *J Phys Chem* 72(2):464-470. <https://doi.org/10.1021/j100848a012>.
- Spiller HA. 2018. Rethinking mercury: the role of selenium in the pathophysiology of mercury toxicity. *Clin Toxicol (Phila)* 56(5):313-326. <https://doi.org/10.1080/15563650.2017.1400555>.
- Sprovieri F, Pirrone N, Bencardino M, et al. 2016. Atmospheric mercury concentrations observed at ground-based monitoring sites globally distributed in the framework of the GMOS network. *Atmos Chem Phys* 16(18):11915-11935. <https://doi.org/10.5194/acp-16-11915-2016>.
- Stankovic R. 2006. Atrophy of large myelinated motor axons and declining muscle grip strength following mercury vapor inhalation in mice. *Inhal Toxicol* 18(1):57-69. <https://doi.org/10.1080/08958370500282902>.
- Stein ED, Cohen Y, Winer AM. 1996. Environmental distribution and transformation of mercury compounds. *Crit Rev Environ Sci* 26(1):1-43. <https://doi.org/10.1080/10643389609388485>.
- Stern AH. 1997. Estimation of the interindividual variability in the one-compartment pharmacokinetic model for methylmercury: implications for the derivation of a reference dose. *Regul Toxicol Pharmacol* 25(3):277-288. <https://doi.org/10.1006/rtph.1997.1105>.
- Stern AH. 2005. Balancing the risks and benefits of fish consumption. *Ann Intern Med* 142(11):949.
- Stern AH, Smith AE. 2003. An assessment of the cord blood:maternal blood methylmercury ratio: implications for risk assessment. *Environ Health Perspect* 111(12):1465-1470.
- Stern S, Cox C, Cernichiari E, et al. 2001. Perinatal and lifetime exposure to methylmercury in the mouse: blood and brain concentrations of mercury to 26 months of age. *Neurotoxicology* 22(4):467-477.
- Steuerwald U, Weihe P, Jorgensen PJ, et al. 2000. Maternal seafood diet, methylmercury exposure, and neonatal neurologic function. *J Pediatr* 136(5):599-605. <https://doi.org/10.1067/mpd.2000.102774>.
- Stewart PW, Reihman J, Lonky EI, et al. 2003. Cognitive development in preschool children prenatally exposed to PCBs and MeHg. *Neurotoxicol Teratol* 25(1):11-22. [https://doi.org/10.1016/s0892-0362\(02\)00320-3](https://doi.org/10.1016/s0892-0362(02)00320-3).
- Stoiber T, Bonacker D, Bohm KJ, et al. 2004. Disturbed microtubule function and induction of micronuclei by chelate complexes of mercury(II). *Mutat Res* 563(2):97-106. <https://doi.org/10.1016/j.mrgentox.2004.06.009>.
- Stoltenburg-Didinger G, Markwort S. 1990. Prenatal methylmercury exposure results in dendritic spine dysgenesis in rats. *Neurotoxicol Teratol* 12(6):573-576. [https://doi.org/10.1016/0892-0362\(90\)90064-j](https://doi.org/10.1016/0892-0362(90)90064-j).
- Storelli MM, Giacomini Stuffer R, Storelli A, et al. 2003. Total mercury and methylmercury content in edible fish from the Mediterranean Sea. *J Food Prot* 66(2):300-303.

8. REFERENCES

- Storm DL. 1994. Chemical monitoring of California's public drinking water sources: Public exposures and health impacts. In: Wang RG, ed. *Water contamination and health*. New York, NY: Marcel Dekker, Inc, 67-124.
- Strain JJ, Davidson PW, Bonham MP, et al. 2008. Associations of maternal long-chain polyunsaturated fatty acids, methyl mercury, and infant development in the Seychelles Child Development Nutrition Study. *Neurotoxicology* 29(5):776-782. <https://doi.org/10.1016/j.neuro.2008.06.002>.
- Strain JJ, Davidson PW, Thurston SW, et al. 2012. Maternal PUFA status but not prenatal methylmercury exposure is associated with children's language functions at age five years in the Seychelles. *J Nutr* 142(11):1943-1949. <https://doi.org/10.3945/jn.112.163493>.
- Strain JJ, Yeates AJ, van Wijngaarden E, et al. 2015. Prenatal exposure to methyl mercury from fish consumption and polyunsaturated fatty acids: associations with child development at 20 mo of age in an observational study in the Republic of Seychelles. *Am J Clin Nutr* 101(3):530-537. <https://doi.org/10.3945/ajcn.114.100503>.
- Strain JJ, Love TM, Yeates AJ, et al. 2021. Associations of prenatal methylmercury exposure and maternal polyunsaturated fatty acid status with neurodevelopmental outcomes at 7 years of age: results from the Seychelles Child Development Study Nutrition Cohort 2. *Am J Clin Nutr* 113(2):304-313. <https://doi.org/10.1093/ajcn/nqaa338>.
- Stratakis N, Golden-Mason L, Margetaki K, et al. 2021. In utero exposure to mercury is associated with increased susceptibility to liver injury and inflammation in childhood. *Hepatology* 74(3):1546-1559. <https://doi.org/10.1002/hep.31809>.
- Streets DG, Horowitz HM, Jacob DJ, et al. 2017. Total mercury released to the environment by human activities. *Environ Sci Technol* 51(11):5969-5977. <https://doi.org/10.1021/acs.est.7b00451>.
- Su M, Wakabayashi K, Kakita A, et al. 1998. Selective involvement of large motor neurons in the spinal cord of rats treated with methylmercury. *J Neurol Sci* 156(1):12-17. [https://doi.org/10.1016/s0022-510x\(98\)00030-6](https://doi.org/10.1016/s0022-510x(98)00030-6).
- Subhavana KL, Qureshi A, Roy A. 2019. Mercury levels in human hair in South India: baseline, artisanal goldsmiths and coal-fired power plants. *J Expo Sci Environ Epidemiol* 29(5):697-705. <https://doi.org/10.1038/s41370-018-0107-0>.
- Suda I, Hirayama K. 1992. Degradation of methyl and ethyl mercury into inorganic mercury by hydroxyl radical produced from rat liver microsomes. *Arch Toxicol* 66(6):398-402.
- Suda I, Totoki S, Uchida T, et al. 1992. Degradation of methyl and ethyl mercury into inorganic mercury by various phagocytic cells. *Arch Toxicol* 66(1):40-44.
- Suda I, Suda M, Hirayama K. 1993. Phagocytic cells as a contributor to in vivo degradation of alkyl mercury. *Bull Environ Contam Toxicol* 51(3):394-400. <https://doi.org/10.1007/bf00201758>.
- Sugawara N, Lai YR, Sugawara C, et al. 1998. Decreased hepatobiliary secretion of inorganic mercury, its deposition and toxicity in the Eisai hyperbilirubinemic rat with no hepatic canalicular organic anion transporter. *Toxicology* 126(1):23-31.
- Sukhn C, Awwad J, Ghantous A, et al. 2018. Associations of semen quality with non-essential heavy metals in blood and seminal fluid: Data from the environment and male infertility (EMI) study in Lebanon. *J Assist Reprod Genet* 35:1691-1701. <https://doi.org/10.1007/s10815-018-1236-z>.
- Sumino K, Hayakawa K, Shibata T, et al. 1975. Heavy metals in normal Japanese tissues: Amounts of 15 heavy metals in 30 subjects. *Arch Environ Health* 30(10):487-494.
- Sun YH, Nfor ON, Huang JY, et al. 2015. Association between dental amalgam fillings and Alzheimer's disease: a population-based cross-sectional study in Taiwan. *Alzheimers Res Ther* 7(1):65. <https://doi.org/10.1186/s13195-015-0150-1>.
- Sun B, Fan S, Yao K, et al. 2018. Changes in intraepidermal nerve fiber and Langerhans cell densities in the plantar skin of rats after mercuric chloride exposure. *J Peripher Nerv Syst* 23(1):17-22. <https://doi.org/10.1111/jns.12246>.
- Sun Y, Zhou Q, Zheng J. 2019. Nephrotoxic metals of cadmium, lead, mercury and arsenic and the odds of kidney stones in adults: An exposure-response analysis of NHANES 2007-2016. *Environ Int* 132:105115. <https://doi.org/10.1016/j.envint.2019.105115>.

8. REFERENCES

- Sun Y, Liu B, Rong S, et al. 2021. Association of seafood consumption and mercury exposure with cardiovascular and all-cause mortality among US adults. *JAMA Netw Open* 4(11):e2136367. <https://doi.org/10.1001/jamanetworkopen.2021.36367>.
- Sundberg J, Oskarsson A, Albanus L. 1991. Methylmercury exposure during lactation: milk concentration and tissue uptake of mercury in the neonatal rat. *Bull Environ Contam Toxicol* 46(2):255-262.
- Sundberg J, Jonsson S, Karlsson MO, et al. 1998. Kinetics of methylmercury and inorganic mercury in lactating and nonlactating mice. *Toxicol Appl Pharmacol* 151(2):319-329. <https://doi.org/10.1006/taap.1998.8456>.
- Sundberg J, Jonsson S, Karlsson MO, et al. 1999. Lactational exposure and neonatal kinetics of methylmercury and inorganic mercury in mice. *Toxicol Appl Pharmacol* 154(2):160-169. <https://doi.org/10.1006/taap.1998.8566>.
- Sunderman FW. 1978. Clinical response to therapeutic agents in poisoning from mercury vapor. *Ann Clin Lab Sci* 8(4):259-269.
- Surkan PJ, Wypij D, Trachtenberg F, et al. 2009. Neuropsychological function in school-age children with low mercury exposures. *Environ Res* 109(6):728-733. <https://doi.org/10.1016/j.envres.2009.04.006>.
- 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(3):365-374.
- Suvarapu LN, Baek SO. 2017. Recent studies on the speciation and determination of mercury in different environmental matrices using various analytical techniques. *Int J Anal Chem* 2017:1-28. <https://doi.org/10.1155/2017/3624015>.
- Suzuki T, Matsumoto N, Miyama T, et al. 1967. Placental transfer of mercuric chloride, phenyl mercury acetate and methyl mercury acetate in mice. *Ind Health* 5:149-155.
- Suzuki T, Miyama T, Katsunuma H. 1970. Comparison of mercury contents in maternal blood, umbilical cord blood, and placental tissues. *Bull Environ Contam Toxicol* 5(6):502-508. <https://doi.org/10.1007/bf01539978>.
- Suzuki T, Watanabe S, Matsuo N. 1989. Comparison of hair with nail as index media for biological monitoring of mercury. *Sangyo Igaku* 31(4):235-238. <https://doi.org/10.1539/joh1959.31.235>.
- Swain EB, Engstrom DR, Brigham ME, et al. 1992. Increasing rates of atmospheric mercury deposition in midcontinental North America. *Science* 257(5071):784-787. <https://doi.org/10.1126/science.257.5071.784>.
- Sweeney LM, Gearhart JM. 2020. Examples of physiologically based pharmacokinetic modeling applied to risk assessment. In: Fisher JW, Gearhart JM, Lin Z, eds. *Physiologically based pharmacokinetic (PBPK) modeling*. Elsevier, Inc., 281-299. <https://doi.org/10.1016/B978-0-12-818596-4.00011-4>.
- Syversen T, Kaur P. 2012. The toxicology of mercury and its compounds. *J Trace Elem Med Biol* 26(4):215-226. <https://doi.org/10.1016/j.jtemb.2012.02.004>.
- Szász A, Barna B, Gajda Z, et al. 2002. Effects of continuous low-dose exposure to organic and inorganic mercury during development on epileptogenicity in rats. *Neurotoxicology* 23(2):197-206. [https://doi.org/10.1016/s0161-813x\(02\)00022-0](https://doi.org/10.1016/s0161-813x(02)00022-0).
- Takahashi H, Takahashi H, Nomiyama K. 2000a. Mercury exposure does not elevate systolic blood pressure in normotensive rats. *J Trace Elem Exp Med* 13:239-247.
- Takahashi H, Nomiyama H, Nomiyama K. 2000b. Mercury elevates systolic blood pressure in spontaneously hypertensive rats. *J Trace Elem Exp Med* 13:227-237.
- Takahashi Y, Tsuruta S, Hasegawa J, et al. 2001. Release of mercury from dental amalgam fillings in pregnant rats and distribution of mercury in maternal and fetal tissues. *Toxicology* 163(2-3):115-126.
- Takatani T, Eguchi A, Yamamoto M, et al. 2022. Individual and mixed metal maternal blood concentrations in relation to birth size: An analysis of the Japan Environment and Children's Study (JECS). *Environ Int* 165:107318. <https://doi.org/10.1016/j.envint.2022.107318>.

8. REFERENCES

- Takeuchi H, Shiota Y, Yaoi K, et al. 2022a. Mercury levels in hair are associated with reduced neurobehavioral performance and altered brain structures in young adults. *Commun Biol* 5(1):529. <https://doi.org/10.1038/s42003-022-03464-z>.
- Takeuchi H, Shiota Y, Yaoi K, et al. 2022b. Supplemental material: Mercury levels in hair are associated with reduced neurobehavioral performance and altered brain structures in young adults. *Commun Biol* 5(1) <https://doi.org/10.1038/s42003-022-03464-z>.
- Takeuchi M, Yoshida S, Kawakami C, et al. 2022c. Association of maternal heavy metal exposure during pregnancy with isolated cleft lip and palate in offspring: Japan Environment and Children's Study (JECS) cohort study. *PLoS ONE* 17(3):e0265648. <https://doi.org/10.1371/journal.pone.0265648>.
- Tamashiro H, Arakaki M, Akagi H, et al. 1985. Mortality and survival for Minamata disease. *Int J Epidemiol* 14(4):582-588. <https://doi.org/10.1093/ije/14.4.582>.
- Tamashiro H, Arakaki M, Akagi H, et al. 1986. Effects of ethanol on methyl mercury toxicity in rats. *J Toxicol Environ Health* 18(4):595-605. <https://doi.org/10.1080/15287398609530897>.
- Tan SW, Meiller JC, Mahaffey KR. 2009. The endocrine effects of mercury in humans and wildlife. *Crit Rev Toxicol* 39(3):228-269. <https://doi.org/10.1080/10408440802233259>.
- Tan YM, Chan M, Chukwudebe A, et al. 2020. PBPK model reporting template for chemical risk assessment applications. *Regul Toxicol Pharmacol* 115:104691. <https://doi.org/10.1016/j.yrtph.2020.104691>.
- Tan Y, Fu Y, Huang F, et al. 2023. Association between blood metal exposures and hyperuricemia in the U.S. general adult: A subgroup analysis from NHANES. *Chemosphere* 318:137873. <https://doi.org/10.1016/j.chemosphere.2023.137873>.
- Tanaka T, Naganuma A, Imura N. 1990. Role of gamma-glutamyltranspeptidase in renal uptake and toxicity of inorganic mercury in mice. *Toxicology* 60(3):187-198. [https://doi.org/10.1016/0300-483x\(90\)90142-4](https://doi.org/10.1016/0300-483x(90)90142-4).
- Tanaka T, Naganuma A, Imura N. 1992. Routes for renal transport of methylmercury in mice. *Eur J Pharmacol* 228(1):9-14.
- Tanaka-Kagawa T, Naganuma A, Imura N. 1993. Tubular secretion and reabsorption of mercury compounds in mouse kidney. *J Pharmacol Exp Ther* 264(2):776-782.
- Tang N, Li YM. 2006. Neurotoxic effects in workers of the clinical thermometer manufacture plant. *Int J Occup Med Environ Health* 19(3):198-202. <https://doi.org/10.2478/v10001-006-0023-8>.
- Tang M, Xu C, Lin N, et al. 2016. Lead, mercury, and cadmium in umbilical cord serum and birth outcomes in Chinese fish consumers. *Chemosphere* 148:270-275. <https://doi.org/10.1016/j.chemosphere.2016.01.058>.
- Tang J, Zhu Q, Xu Y, et al. 2022a. Total arsenic, dimethylarsinic acid, lead, cadmium, total mercury, methylmercury and hypertension among Asian populations in the United States: NHANES 2011-2018. *Ecotoxicol Environ Saf* 241:113776. <https://doi.org/10.1016/j.ecoenv.2022.113776>.
- Tang Y, Yi Q, Wang S, et al. 2022b. Normal concentration range of blood mercury and bone mineral density: a cross-sectional study of National Health and Nutrition Examination Survey (NHANES) 2005-2010. *Environ Sci Pollut Res Int* 29(5):7743-7757. <https://doi.org/10.1007/s11356-021-16162-w>.
- Tarabar AF, Su M. 2003. Mercury and cadmium toxicity in a Haitian voodoo minister that resulted in acute renal failure. *J Toxicol Clin Toxicol* 41(5):741-742.
- Tatsuta N, Kurokawa N, Nakai K, et al. 2017. Effects of intrauterine exposures to polychlorinated biphenyls, methylmercury, and lead on birth weight in Japanese male and female newborns. *Environ Health Prev Med* 22(1):39. <https://doi.org/10.1186/s12199-017-0635-6>.
- Tatsuta N, Iwai-Shimada M, Nakayama SF, et al. 2022. Association between whole blood metallic elements concentrations and gestational diabetes mellitus in Japanese women: The Japan environment and Children's study. *Environ Res* 212(Pt B):113231. <https://doi.org/10.1016/j.envres.2022.113231>.

8. REFERENCES

- Taylor CM, Golding J, Emond AM. 2016. Blood mercury levels and fish consumption in pregnancy: Risks and benefits for birth outcomes in a prospective observational birth cohort. *Int J Hyg Environ Health* 219(6):513-520. <https://doi.org/10.1016/j.ijheh.2016.05.004>.
- Taylor CM, Emond AM, Lingam R, et al. 2018a. Prenatal lead, cadmium and mercury exposure and associations with motor skills at age 7 years in a UK observational birth cohort. *Environ Int* 117:40-47. <https://doi.org/10.1016/j.envint.2018.04.032>.
- Taylor VF, Buckman KL, Seelen EA, et al. 2018b. Organic carbon content drives methylmercury levels in the water column and in estuarine food webs across latitudes in the Northeast United States. *Environ Pollut* 246:639-649. <https://doi.org/10.1016/j.envpol.2018.12.064>.
- Teisinger J, Fiserova-Bergerova V. 1965. Pulmonary retention and excretion of mercury vapors in man. *Ind Med Surg* 34:580-584.
- Teixeira FB, Fernandes RM, Farias-Junior PM, et al. 2014. Evaluation of the effects of chronic intoxication with inorganic mercury on memory and motor control in rats. *Int J Environ Res Public Health* 11(9):9171-9185. <https://doi.org/10.3390/ijerph110909171>.
- Teixeira FB, de Oliveira ACA, Leão LKR, et al. 2018. Exposure to inorganic mercury causes oxidative stress, cell death, and functional deficits in the motor cortex. *Front Mol Neurosci* 11:1-11. <https://doi.org/10.3389/fnmol.2018.00125>.
- Teixeira FB, Leão LKR, Bittencourt LO, et al. 2019. Neurochemical dysfunction in motor cortex and hippocampus impairs the behavioral performance of rats chronically exposed to inorganic mercury. *J Trace Elem Med Biol* 52:143-150. <https://doi.org/10.1016/j.jtemb.2018.12.008>.
- Teng CT, Brennan JC. 1959. Acute mercury vapor poisoning. *Radiology* 73(3):354-361. <https://doi.org/10.1148/73.3.354>.
- Tennant R, Johnston HJ, Wells JB. 1961. Acute bilateral pneumonitis associated with the inhalation of mercury vapor. Report of five cases. *Conn Med* 25:106-109.
- Thanyavuthi A, Boonchai W, Kasemsarn P. 2016. Amalgam contact allergy in oral lichenoid lesions. *Dermatitis* 27(4):215-221. <https://doi.org/10.1097/der.0000000000000204>.
- Thera JC, Rumbold DG. 2014. Biomagnification of mercury through a subtropical coastal food web off southwest Florida. *Environ Toxicol Chem* 33(1):65-73. <https://doi.org/10.1002/etc.2416>.
- Theunissen PT, Pennings JL, Robinson JF, et al. 2011. Time-response evaluation by transcriptomics of methylmercury effects on neural differentiation of murine embryonic stem cells. *Toxicol Sci* 122(2):437-447. <https://doi.org/10.1093/toxsci/kfr134>.
- Thomas DJ, Smith JC. 1979. Partial characterization of a low-molecular weight methylmercury complex in rat cerebrum. *Toxicol Appl Pharmacol* 47(3):547-556.
- Thomas DJ, Smith JC. 1982. Effects of coadministered low-molecular-weight thiol compounds on short-term distribution of methyl mercury in the rat. *Toxicol Appl Pharmacol* 62(1):104-110.
- Thomas DJ, Fisher HL, Sumler MR, et al. 1986. Sexual differences in the distribution and retention of organic and inorganic mercury in methyl mercury-treated rats. *Environ Res* 41(1):219-234.
- Thurston SW, Bovet P, Myers GJ, et al. 2007. Does prenatal methylmercury exposure from fish consumption affect blood pressure in childhood? *Neurotoxicology* 28(5):924-930. <https://doi.org/10.1016/j.neuro.2007.06.002>.
- Thurston SW, Myers G, Mruzek D, et al. 2022. Associations between time-weighted postnatal methylmercury exposure from fish consumption and neurodevelopmental outcomes through 24 years of age in the Seychelles Child Development Study Main Cohort. *Neurotoxicology* 91:234-244. <https://doi.org/10.1016/j.neuro.2022.05.016>.
- Thuvander A, Sundberg J, Oskarsson A. 1996. Immunomodulating effects after perinatal exposure to methylmercury in mice. *Toxicology* 114(2):163-175. [https://doi.org/10.1016/s0300-483x\(96\)03486-5](https://doi.org/10.1016/s0300-483x(96)03486-5).
- Tian W, Egeland GM, Sobol I, et al. 2011. Mercury hair concentrations and dietary exposure among Inuit preschool children in Nunavut, Canada. *Environ Int* 37(1):42-48. <https://doi.org/10.1016/j.envint.2010.05.017>.

8. REFERENCES

- Tian T, Yin S, Jin L, et al. 2021. Single and mixed effects of metallic elements in maternal serum during pregnancy on risk for fetal neural tube defects: A Bayesian kernel regression approach. *Environ Pollut* 285:117203. <https://doi.org/10.1016/j.envpol.2021.117203>.
- Tibau AV, Grube BD. 2019. Mercury contamination from dental amalgam. *J Health Pollut* 9(22):190612. <https://doi.org/10.5696/2156-9614-9.22.190612>.
- Timmermann CAG, Choi AL, Petersen MS, et al. 2017. Secondary sex ratio in relation to exposures to polychlorinated biphenyls, dichlorodiphenyl dichloroethylene and methylmercury. *Int J Circumpolar Health* 76(1):1-8. <https://doi.org/10.1080/22423982.2017.1406234>.
- Tiwari SM, Gebauer K, Frydrych AM, et al. 2018. Dental patch testing in patients with undifferentiated oral lichen planus. *Australas J Dermatol* 59:188-193. <https://doi.org/10.1111/ajd.12692>.
- Tonk EC, de Groot DM, Penninks AH, et al. 2010. Developmental immunotoxicity of methylmercury: the relative sensitivity of developmental and immune parameters. *Toxicol Sci* 117(2):325-335. <https://doi.org/10.1093/toxsci/kfq223>.
- Toribara TY, Clarkson TW, Nierenberg DW. 1997. More on working with dimethylmercury. *Chem Eng News* 75(24):3, 6, 11, 12.
- Trachtenberg F, Barregard L, McKinlay S. 2010. The influence of urinary flow rate on mercury excretion in children. *J Trace Elem Med Biol* 24(1):31-35. <https://doi.org/10.1016/j.jtemb.2009.06.003>.
- Trasande L, Landrigan PJ, Schechter C. 2005. Public health and economic consequences of methylmercury toxicity to the developing brain. *Environ Health Perspect* 113(5):590-596.
- TRI22. 2024. TRI explorer: Providing access to EPA's toxics release inventory data. Washington, DC: Toxics Release Inventory. U.S. Environmental Protection Agency. <http://www.epa.gov/triexplorer/>. March 15, 2023.
- Trotter R. 1985. Greta and azarcon: A survey of episodic lead poisoning from a folk remedy. *Hum Organ* 44(1):64-72. <https://doi.org/10.17730/humo.44.1.u448k01428282555>.
- Tsai TL, Kuo CC, Pan WH, et al. 2019. Type 2 diabetes occurrence and mercury exposure - From the National Nutrition and Health Survey in Taiwan. *Environ Int* 126:260-267. <https://doi.org/10.1016/j.envint.2019.02.038>.
- Tseng CF, Chen KH, Yu HC, et al. 2020a. Dental amalgam fillings and multiple sclerosis: A nationwide population-based case-control study in Taiwan. *Int J Environ Res Public Health* 17(8):2637. <https://doi.org/10.3390/ijerph17082637>.
- Tseng CF, Chen KH, Yu HC, et al. 2020b. Association between dental amalgam filling and essential tremor: A nationwide population-based case control study in Taiwan. *Int J Environ Res Public Health* 17(3):780. <https://doi.org/10.3390/ijerph17030780>.
- Tsuji JS, Williams PR, Edwards MR, et al. 2003. Evaluation of mercury in urine as an indicator of exposure to low levels of mercury vapor. *Environ Health Perspect* 111(4):623-630.
- Tsuji M, Shibata E, Morokuma S, et al. 2018. The association between whole blood concentrations of heavy metals in pregnant women and premature births: The Japan Environment and Children's Study (JECS). *Environ Res* 166:562-569. <https://doi.org/10.1016/j.envres.2018.06.025>.
- Tsuji M, Shibata E, Askew DJ, et al. 2019. Associations between metal concentrations in whole blood and placenta previa and placenta accreta: the Japan Environment and Children's Study (JECS). *Environ Health Prev Med* 24(1):40. <https://doi.org/10.1186/s12199-019-0795-7>.
- Tuček M, Bušová M, Čejchanová M, et al. 2020. Exposure to mercury from dental amalgam: actual contribution for risk assessment. *Cent Eur J Public Health* 28(1):40-43. <https://doi.org/10.21101/cejph.a5965>.
- Turner RR, Bogle MA. 1993. Ambient air monitoring for mercury around an industrial complex. In: Chow W, Connor KK, eds. *Managing hazardous air pollutants state of the art*. Boca Raton, FL: Lewis Publishers, 162-172.
- Turner RR, Mitchell CPJ, Kopec AD, et al. 2018. Tidal fluxes of mercury and methylmercury for Mendall Marsh, Penobscot River estuary, Maine. *Sci Total Environ* 637-638:145-154. <https://doi.org/10.1016/j.scitotenv.2018.04.395>.

8. REFERENCES

- U.S. Atomic Energy Commission. 1961. Studies on the equilibration of mercury vapor with blood. UR Reports. U.S. Atomic Energy Commission. UR-582.
- Uchikawa T, Kanno T, Maruyama I, et al. 2016. Demethylation of methylmercury and the enhanced production of formaldehyde in mouse liver. *J Toxicol Sci* 41(4):479-487. <https://doi.org/10.2131/jts.41.479>.
- Uchino M, Hirano T, Satoh H, et al. 2005. The severity of Minamata disease declined in 25 years: temporal profile of the neurological findings analyzed by multiple logistic regression model. *Tohoku J Exp Med* 205(1):53-63.
- UNEP. 2018. Global mercury assessment 2018. Geneva, Switzerland: United Nations Environment Programme. <https://www.unep.org/resources/publication/global-mercury-assessment-2018>. August 20, 2021.
- Urano T, Iwasaki A, Himeno S, et al. 1990. Absorption of methylmercury compounds from rat intestine. *Toxicol Lett* 50(2-3):159-164.
- Urban P, Gobba F, Nerudova J, et al. 2003. Color discrimination impairment in workers exposed to mercury vapor. *Neurotoxicology* 24(4-5):711-716. [https://doi.org/10.1016/s0161-813x\(03\)00036-6](https://doi.org/10.1016/s0161-813x(03)00036-6).
- Ursitti F, Marano M, Locatelli CA, et al. 2022. Developmental regression, hypertension, and pink extremities in childhood mercury poisoning. *Neuropediatrics* 53(6):448-450. <https://doi.org/10.1055/a-1788-7340>.
- USGS. 1997. Mercury. United States Geological Survey.
- USGS. 2013. Mineral commodity summaries, January 2013. U.S. Geological Survey. <https://doi.org/10.3133/mineral2013>.
- USGS. 2014. Mercury in the nation's streams - levels, trends, and implications. Reston, VA: U.S. Geological Survey. Circular 1395. <https://doi.org/10.3133/cir1395>.
- USGS. 2016. Mercury concentrations in water and mercury and selenium concentrations in fish from Brownlee Reservoir and selected sites in Boise and Snake Rivers, Idaho and Oregon, 2013-15. U.S. Geological Survey. Open-File Report 2016-1098. <https://doi.org/10.3133/ofr20161098>.
- USGS. 2020. Mineral commodity summaries, January 2020. U.S. Geological Survey. <https://pubs.usgs.gov/periodicals/mcs2020/mcs2020.pdf>. January 21, 2021.
- USGS. 2023a. Mineral commodity summaries 2023. Reston, VA: U.S. Geological Survey. <https://doi.org/10.3133/mcs2023>.
- USGS. 2023b. Great lakes sediment surveillance program: mercury concentrations and mercury stable isotopes in sediments of the Laurentian Great Lakes. U.S. Geological Survey. <https://doi.org/10.5066/P9VB8GO6>.
- Usuki F, Yasutake A, Matsumoto M, et al. 1998. The effect of methylmercury on skeletal muscle in the rat: A histopathological study. *Toxicol Lett* 94(3):227-232. [https://doi.org/10.1016/s0378-4274\(98\)00022-8](https://doi.org/10.1016/s0378-4274(98)00022-8).
- Vahter M, Mottet NK, Friberg L, et al. 1994. Speciation of mercury in the primate blood and brain following long-term exposure to methyl mercury. *Toxicol Appl Pharmacol* 124(2):221-229. <https://doi.org/10.1006/taap.1994.1026>.
- Vahter ME, Mottet NK, Friberg LT, et al. 1995. Demethylation of methyl mercury in different brain sites of *Macaca fascicularis* monkeys during long-term subclinical methyl mercury exposure. *Toxicol Appl Pharmacol* 134(2):273-284. <https://doi.org/10.1006/taap.1995.1193>.
- Vahter M, Akesson A, Lind B, et al. 2000. Longitudinal study of methylmercury and inorganic mercury in blood and urine of pregnant and lactating women, as well as in umbilical cord blood. *Environ Res* 84(2):186-194. <https://doi.org/10.1006/enrs.2000.4098>.
- Valcke M, Ouellet N, Dubé M, et al. 2019. Biomarkers of cadmium, lead and mercury exposure in relation with early biomarkers of renal dysfunction and diabetes: Results from a pilot study among aging Canadians. *Toxicol Lett* 312:148-156. <https://doi.org/10.1016/j.toxlet.2019.05.014>.
- Valent F, Mariuz M, Bin M, et al. 2013. Associations of prenatal mercury exposure from maternal fish consumption and polyunsaturated fatty acids with child neurodevelopment: a prospective cohort study in Italy. *J Epidemiol* 23(5):360-370. <https://doi.org/10.2188/jea.je20120168>.

8. REFERENCES

- Valera B, Dewailly E, Poirier P. 2008. Cardiac autonomic activity and blood pressure among Nunavik Inuit adults exposed to environmental mercury: a cross-sectional study. *Environ Health* 7:29. <https://doi.org/10.1186/1476-069x-7-29>.
- Valera B, Dewailly E, Poirier P. 2009. Environmental mercury exposure and blood pressure among Nunavik Inuit adults. *Hypertension* 54(5):981-986. <https://doi.org/10.1161/hypertensionaha.109.135046>.
- Valera B, Dewailly E, Poirier P, et al. 2011a. Influence of mercury exposure on blood pressure, resting heart rate and heart rate variability in French Polynesians: a cross-sectional study. *Environ Health* 10:99. <https://doi.org/10.1186/1476-069x-10-99>.
- Valera B, Dewailly E, Poirier P. 2011b. Impact of mercury exposure on blood pressure and cardiac autonomic activity among Cree adults (James Bay, Quebec, Canada). *Environ Res* 111(8):1265-1270. <https://doi.org/10.1016/j.envres.2011.09.001>.
- Valera B, Muckle G, Poirier P, et al. 2012. Cardiac autonomic activity and blood pressure among Inuit children exposed to mercury. *Neurotoxicology* 33(5):1067-1074.
- Valera B, Dewailly E, Poirier P. 2013. Association between methylmercury and cardiovascular risk factors in a native population of Quebec (Canada): a retrospective evaluation. *Environ Res* 120:102-108. <https://doi.org/10.1016/j.envres.2012.08.002>.
- van Wijngaarden E, Beck C, Shamlaye CF, et al. 2006. Benchmark concentrations for methyl mercury obtained from the 9-year follow-up of the Seychelles Child Development Study. *Neurotoxicology* 27(5):702-709. <https://doi.org/10.1016/j.neuro.2006.05.016>.
- van Wijngaarden E, Myers GJ, Thurston SW, et al. 2009. Interpreting epidemiological evidence in the presence of multiple endpoints: an alternative analytic approach using the 9-year follow-up of the Seychelles child development study. *Int Arch Occup Environ Health* 82(8):1031-1041. <https://doi.org/10.1007/s00420-009-0402-0>.
- van Wijngaarden E, Davidson PW, Smith TH, et al. 2013. Autism spectrum disorder phenotypes and prenatal exposure to methylmercury. *Epidemiology* 24(5):651-659. <https://doi.org/10.1097/EDE.0b013e31829d2651>.
- van Wijngaarden E, Harrington D, Kobrosly R, et al. 2014. Prenatal exposure to methylmercury and LCPUFA in relation to birth weight. *Ann Epidemiol* 24(4):273-278. <https://doi.org/10.1016/j.annepidem.2014.01.002>.
- van Wijngaarden E, Thurston SW, Myers GJ, et al. 2017. Methyl mercury exposure and neurodevelopmental outcomes in the Seychelles Child Development Study Main cohort at age 22 and 24 years. *Neurotoxicol Teratol* 59:35-42. <https://doi.org/10.1016/j.ntt.2016.10.011>.
- Vandal GM, Mason RP, Fitzgerald WF. 1991. Cycling of volatile mercury in temperate lakes. *Water Air Soil Pollut* 56(1):791-803. <https://doi.org/10.1007/bf00342317>.
- Vas J, Monestier M. 2008. Immunology of mercury. *Ann N Y Acad Sci* 1143:240-267. <https://doi.org/10.1196/annals.1443.022>.
- Vasquez C. 2012. Human skull, bones found at site of horse slaughter investigation. *Local10*. <http://www.local10.com/news/Human-skull-bones-found-at-site-of-horse-slaughter-investigation/-/1717324/10536270/-/foq2vmz/-/index.html>. May 17, 2021.
- Vassallo DV, Simoes MR, Furieri LB, et al. 2011. Toxic effects of mercury, lead and gadolinium on vascular reactivity. *Braz J Med Biol Res* 44(9):939-946.
- Vazquez M, Velez D, Devesa V. 2014. In vitro characterization of the intestinal absorption of methylmercury using a Caco-2 cell model. *Chem Res Toxicol* 27(2):254-264. <https://doi.org/10.1021/tx4003758>.
- Vazquez M, Velez D, Devesa V, et al. 2015. Participation of divalent cation transporter DMT1 in the uptake of inorganic mercury. *Toxicology* 331:119-124. <https://doi.org/10.1016/j.tox.2015.03.005>.
- Vejrup K, Schjolberg S, Knutsen HK, et al. 2016. Prenatal methylmercury exposure and language delay at three years of age in the Norwegian Mother and Child Cohort Study. *Environ Int* 92-93:63-69. <https://doi.org/10.1016/j.envint.2016.03.029>.

8. REFERENCES

- Vejrup K, Brandlistuen RE, Brantsaeter AL, et al. 2018. Prenatal mercury exposure, maternal seafood consumption and associations with child language at five years. *Environ Int* 110:71-79. <https://doi.org/10.1016/j.envint.2017.10.008>.
- Vejrup K, Brantsaeter AL, Meltzer HM, et al. 2022. Prenatal mercury exposure, fish intake and child emotional behavioural regulation in the Norwegian Mother, Father and Child Cohort Study. *BMJ Nutr Prev Health* 5(2):313-320. <https://doi.org/10.1136/bmjnp-2021-000412>.
- Venter C, Olivier A, Taute H, et al. 2020. Histological analysis of the effects of cadmium, chromium and mercury alone and in combination on the spleen of male Sprague-Dawley rats. *J Environ Sci Health A Tox Hazard Subst Environ Eng* 55(8):925-934. <https://doi.org/10.1080/10934529.2020.1756158>.
- Ventura DF, Costa MT, Costa MF, et al. 2004. Multifocal and full-field electroretinogram changes associated with color-vision loss in mercury vapor exposure. *Vis Neurosci* 21(3):421-429.
- Ventura DF, Simoes AL, Tomaz S, et al. 2005. Colour vision and contrast sensitivity losses of mercury intoxicated industry workers in Brazil. *Environ Toxicol Pharmacol* 19(3):523-529. <https://doi.org/10.1016/j.etap.2004.12.016>.
- Verberk MM, Sallé HJA, Kemper CH. 1986. Tremor in workers with low exposure to metallic mercury. *Am Ind Hyg Assoc J* 47(9):559-562. <https://doi.org/10.1080/15298668691390232>.
- Verger P, Houdart S, Marette S, et al. 2007. Impact of a risk-benefit advisory on fish consumption and dietary exposure to methylmercury in France. *Regul Toxicol Pharmacol* 48(3):259-269. <https://doi.org/10.1016/j.yrtph.2007.04.005>.
- Verschaeve L, Kirsch-Volders M, Susanne C, et al. 1976. Genetic damage induced by occupationally low mercury exposure. *Environ Res* 12(3):306-316.
- Verschaeve L, Tassinon JP, Lefevre M, et al. 1979. Cytogenetic investigation on leukocytes of workers exposed to metallic mercury. *Environ Mutagen* 1(3):259-268. <https://doi.org/10.1002/em.2860010308>.
- Verschuere K. 1983. Mercury. In: *Handbook of environmental data on organic chemicals*. 2nd ed. New York, NY: Van Nostrand Reinhold Co, 991-992.
- Verschuere HG, Kroes R, Den Tonkelaar EM, et al. 1976. Toxicity of methylmercury chloride in rats. III. Long-term toxicity study. *Toxicology* 6(1):107-123. [https://doi.org/10.1016/0300-483x\(76\)90012-3](https://doi.org/10.1016/0300-483x(76)90012-3).
- Vezer T, Papp A, Kurunzi A, et al. 2005. Behavioral and neurotoxic effects seen during and after subchronic exposure of rats to organic mercury. *Environ Toxicol Pharmacol* 19(3):785-796. <https://doi.org/10.1016/j.etap.2004.12.045>.
- Vigeh M, Nishioka E, Ohtani K, et al. 2018. Prenatal mercury exposure and birth weight. *Reprod Toxicol* 76:78-83. <https://doi.org/10.1016/j.reprotox.2018.01.002>.
- Vilagi I, Doczi J, Banczerowski-Pelyhe I. 2000. Altered electrophysiological characteristics of developing rat cortical neurones after chronic methylmercury chloride treatment. *Int J Dev Neurosci* 18(6):493-499. [https://doi.org/10.1016/s0736-5748\(00\)00027-7](https://doi.org/10.1016/s0736-5748(00)00027-7).
- Vimercati L, Santarelli L, Pesola G, et al. 2001. Monocyte-macrophage system and polymorphonuclear leukocytes in workers exposed to low levels of metallic mercury. *Sci Total Environ* 270(1-3):157-163. [https://doi.org/10.1016/s0048-9697\(00\)00780-4](https://doi.org/10.1016/s0048-9697(00)00780-4).
- Vimy MJ, Takahashi Y, Lorscheider FL. 1990. Maternal-fetal distribution of mercury (203Hg) released from dental amalgam fillings. *Am J Physiol Regul Integr Comp Physiol* 258(4):R939-R945. <https://doi.org/10.1152/ajpregu.1990.258.4.R939>.
- Virtanen JK, Voutilainen S, Rissanen TH, et al. 2005. Mercury, fish oils, and risk of acute coronary events and cardiovascular disease, coronary heart disease, and all-cause mortality in men in eastern Finland. *Arterioscler Thromb Vasc Biol* 25(1):228-233. <https://doi.org/10.1161/01.atv.0000150040.20950.61>.
- Virtanen JK, Rissanen TH, Voutilainen S, et al. 2007. Mercury as a risk factor for cardiovascular diseases. *J Nutr Biochem* 18(2):75-85. <https://doi.org/10.1016/j.jnutbio.2006.05.001>.

8. REFERENCES

- Virtanen JK, Laukkanen JA, Mursu J, et al. 2012a. Serum long-chain n-3 polyunsaturated fatty acids, mercury, and risk of sudden cardiac death in men: A prospective population-based study. *PLoS ONE* 7(7):e41046. <https://doi.org/10.1371/journal.pone.0041046>.
- Virtanen JK, Nyantika AN, Kauhanen J, et al. 2012b. Serum long-chain n-3 polyunsaturated fatty acids, methylmercury and blood pressure in an older population. *Hypertens Res* 35(10):1000-1004. <https://doi.org/10.1038/hr.2012.80>.
- Vogel DG, Margolis RL, Mottet NK. 1985. The effects of methyl mercury binding to microtubules. *Toxicol Appl Pharmacol* 80(3):473-486. [https://doi.org/10.1016/0041-008x\(85\)90392-8](https://doi.org/10.1016/0041-008x(85)90392-8).
- Vollset M, Iszatt N, Enger Ø, et al. 2019. Concentration of mercury, cadmium, and lead in breast milk from Norwegian mothers: Association with dietary habits, amalgam and other factors. *Sci Total Environ* 677:466-473. <https://doi.org/10.1016/j.scitotenv.2019.04.252>.
- Vupputuri S, Longnecker MP, Daniels JL, et al. 2005. Blood mercury level and blood pressure among US women: results from the National Health and Nutrition Examination Survey 1999-2000. *Environ Res* 97(2):195-200. <https://doi.org/10.1016/j.envres.2004.05.001>.
- Wagemann R, Lockhart WL, Welch H, et al. 1995. Arctic marine mammals as integrators and indicators of mercury in the arctic. In: Porcella DB, Wheatley B, eds. *Mercury as a global pollutant. Proceedings of the Third International Conference Whistler, British Columbia, July 10-14, 1994*. Boston, MA: Kluwer Academic Publishers, 683-693.
- Wahlberg JE. 1965. Percutaneous toxicity of metal compounds. A comparative investigation in guinea pigs. *Arch Environ Health* 11(2):201-204. <https://doi.org/10.1080/00039896.1965.10664198>.
- Wahlberg K, Love TM, Pineda D, et al. 2018. Maternal polymorphisms in glutathione-related genes are associated with maternal mercury concentrations and early child neurodevelopment in a population with a fish-rich diet. *Environ Int* 115:142-149. <https://doi.org/10.1016/j.envint.2018.03.015>.
- Wakita Y. 1987. Hypertension induced by methyl mercury in rats. *Toxicol Appl Pharmacol* 89(1):144-147. [https://doi.org/10.1016/0041-008x\(87\)90185-2](https://doi.org/10.1016/0041-008x(87)90185-2).
- Walker EV, Girgis S, Yuan Y, et al. 2021. Community-driven research in the Canadian Arctic: dietary exposure to methylmercury and gastric health outcomes. *Int J Circumpolar Health* 80(1):1889879. <https://doi.org/10.1080/22423982.2021.1889879>.
- Wands JR, Weiss SW, Yardley JH, et al. 1974. Chronic inorganic mercury poisoning due to laxative abuse: A clinical and ultrastructural study. *Am J Med* 57(1):92-101. [https://doi.org/10.1016/0002-9343\(74\)90773-6](https://doi.org/10.1016/0002-9343(74)90773-6).
- Wang JS, Huang PM, Liaw WK, et al. 1991. Kinetics of the desorption of mercury from selected freshwater sediments as influenced by chloride. *Water Air Soil Pollut* 56(1):533-542. <https://doi.org/10.1007/bf00342297>.
- Wang W, Clarkson TW, Ballatori N. 2000. gamma-Glutamyl transpeptidase and l-cysteine regulate methylmercury uptake by HepG2 cells, a human hepatoma cell line. *Toxicol Appl Pharmacol* 168(1):72-78. <https://doi.org/10.1006/taap.2000.9018>.
- Wang Y, Goodrich JM, Werner R, et al. 2012. An investigation of modifying effects of single nucleotide polymorphisms in metabolism-related genes on the relationship between peripheral nerve function and mercury levels in urine and hair. *Sci Total Environ* 417-418:32-38. <https://doi.org/10.1016/j.scitotenv.2011.12.019>.
- Wang Q, Yang X, Zhang B, et al. 2013. Cinnabar is different from mercuric chloride in mercury absorption and influence on the brain serotonin level. *Basic Clin Pharmacol Toxicol* 112(6):412-417. <https://doi.org/10.1111/bcpt.12045>.
- Wang X, Mukherjee B, Park SK. 2018. Associations of cumulative exposure to heavy metal mixtures with obesity and its comorbidities among U.S. adults in NHANES 2003-2014. *Environ Int* 121(Pt 1):683-694. <https://doi.org/10.1016/j.envint.2018.09.035>.
- Wang J, Wu W, Li H, et al. 2019a. Relation of prenatal low-level mercury exposure with early child neurobehavioral development and exploration of the effects of sex and DHA on it. *Environ Int* 126:14-23. <https://doi.org/10.1016/j.envint.2019.02.012>.

8. REFERENCES

- Wang Y, Zhang P, Chen X, et al. 2019b. Multiple metal concentrations and gestational diabetes mellitus in Taiyuan, China. *Chemosphere* 237:124412. <https://doi.org/10.1016/j.chemosphere.2019.124412>.
- Wang G, DiBari J, Bind E, et al. 2019c. In utero exposure to mercury and childhood overweight or obesity: counteracting effect of maternal folate status. *BMC Med* 17(1):216. <https://doi.org/10.1186/s12916-019-1442-2>.
- Wang Y, Wang K, Han T, et al. 2020. Exposure to multiple metals and prevalence for preeclampsia in Taiyuan, China. *Environ Int* 145:106098. <https://doi.org/10.1016/j.envint.2020.106098>.
- Wang G, Tang WY, Ji H, et al. 2021a. Prenatal exposure to mercury and precocious puberty: a prospective birth cohort study. *Hum Reprod* 36(3):712-720. <https://doi.org/10.1093/humrep/deaa315>.
- Wang X, Karvonen-Gutierrez CA, Herman WH, et al. 2021b. Urinary heavy metals and longitudinal changes in blood pressure in midlife women: the study of women's health across the nation. *Hypertension* 78(2):543-551. <https://doi.org/10.1161/hypertensionaha.121.17295>.
- Wang W, Zhang L, Deng C, et al. 2022a. In utero exposure to methylmercury impairs cognitive function in adult offspring: Insights from proteomic modulation. *Ecotoxicol Environ Saf* 231:113191. <https://doi.org/10.1016/j.ecoenv.2022.113191>.
- Wang J, Yin J, Hong X, et al. 2022b. Exposure to heavy metals and allergic outcomes in children: a systematic review and meta-analysis. *Biol Trace Elem Res* 200(11):4615-4631. <https://doi.org/10.1007/s12011-021-03070-w>.
- Wang C, Pi X, Yin S, et al. 2022c. Maternal exposure to heavy metals and risk for severe congenital heart defects in offspring. *Environ Res* 212(Pt C):113432. <https://doi.org/10.1016/j.envres.2022.113432>.
- Wang K, Mao Y, Liu Z, et al. 2023a. Association of blood heavy metal exposure with atherosclerotic cardiovascular disease (ASCVD) among white adults: evidence from NHANES 1999-2018. *Biol Trace Elem Res* 201(9):4321-4333. <https://doi.org/10.1007/s12011-022-03537-4>.
- Wang G, Fang L, Chen Y, et al. 2023b. Association between exposure to mixture of heavy metals and hyperlipidemia risk among U.S. adults: A cross-sectional study. *Chemosphere* 344:140334. <https://doi.org/10.1016/j.chemosphere.2023.140334>.
- Wang X, Ding N, Harlow SD, et al. 2023c. Exposure to heavy metals and hormone levels in midlife women: The Study of Women's Health Across the Nation (SWAN). *Environ Pollut* 317:120740. <https://doi.org/10.1016/j.envpol.2022.120740>.
- Wang YL, Tsou MM, Lai LC, et al. 2023d. Oral and inhalation bioaccessibility of mercury in contaminated soils and potential health risk to the kidneys and neurodevelopment of children in Taiwan. *Environ Geochem Health* 45(8):6267-6286. <https://doi.org/10.1007/s10653-023-01633-5>.
- Warfvinge K. 2000. Mercury distribution in the neonatal and adult cerebellum after mercury vapor exposure of pregnant squirrel monkeys. *Environ Res* 83(2):93-101. <https://doi.org/10.1006/enrs.1999.4013>.
- Warfvinge K, Bruun A. 1996. Mercury accumulation in the squirrel monkey eye after mercury vapour exposure. *Toxicology* 107(3):189-200. [https://doi.org/10.1016/0300-483x\(95\)03257-g](https://doi.org/10.1016/0300-483x(95)03257-g).
- Warfvinge K, Bruun A. 2000. Mercury distribution in the squirrel monkey retina after in utero exposure to mercury vapor. *Environ Res* 83(2):102-109. <https://doi.org/10.1006/enrs.1999.4029>.
- Warfvinge K, Hua J, Logdberg B. 1994a. Mercury distribution in cortical areas and fiber systems of the neonatal and maternal adult cerebrum after exposure of pregnant squirrel monkeys to mercury vapor. *Environ Res* 67(2):196-208. <https://doi.org/10.1006/enrs.1994.1074>.
- Warfvinge G, Warfvinge K, Larsson A. 1994b. Histochemical visualization of mercury in the oral mucosa, salivary and lacrimal glands of BN rats with HgCl₂-induced autoimmunity. *Exp Toxicol Pathol* 46(4):329-334. [https://doi.org/10.1016/S0940-2993\(11\)80112-0](https://doi.org/10.1016/S0940-2993(11)80112-0).
- Warfvinge K, Hansson H, Hultman P. 1995. Systemic autoimmunity due to mercury vapor exposure in genetically susceptible mice: dose-response studies. *Toxicol Appl Pharmacol* 132(2):299-309. <https://doi.org/10.1006/taap.1995.1111>.

8. REFERENCES

- Warren CJ, Dudas MJ. 1992. Acidification adjacent to an elemental sulfur stockpile: II. Trace element redistribution. *Can J Soil Sci* 72(2):127-134. <https://doi.org/10.4141/cjss92-012>.
- Warwick D, Young M, Palmer J, et al. 2019. Mercury vapor volatilization from particulate generated from dental amalgam removal with a high-speed dental drill – a significant source of exposure. *J Occup Med Toxicol* 14(1):22. <https://doi.org/10.1186/s12995-019-0240-2>.
- Washam C. 2011. Beastly beauty products: Exposure to inorganic mercury in skin-lightening creams. *Environ Health Perspect* 119(2):A80.
- Washington State Department of Ecology. 2013. Metals concentrations in sediments of lakes and wetlands in the Upper Columbia River watershed: Lead, zinc, arsenic, cadmium, antimony, and mercury. Washington State Department of Ecology. PB2013109530. Publication No. 13-03-012. <https://apps.ecology.wa.gov/publications/SummaryPages/1303012.html>. January 19, 2021.
- Wasiuta V, Kirk JL, Chambers PA, et al. 2019. Accumulating mercury and methylmercury burdens in watersheds impacted by oil sands pollution. *Environ Sci Technol* 53(21):12856-12864. <https://doi.org/10.1021/acs.est.9b02373>.
- Wastensson G, Lamoureux D, Sallsten G, et al. 2006. Quantitative tremor assessment in workers with current low exposure to mercury vapor. *Neurotoxicol Teratol* 28(6):681-693. <https://doi.org/10.1016/j.ntt.2006.09.001>.
- Wastensson G, Lamoureux D, Sallsten G, et al. 2008. Quantitative assessment of neuromotor function in workers with current low exposure to mercury vapor. *Neurotoxicology* 29(4):596-604. <https://doi.org/10.1016/j.neuro.2008.03.005>.
- Watras CJ, Bloom NS. 1992. Mercury and methylmercury, in individual zooplankton: Implications for bioaccumulation. *Limnol Oceanogr* 37(6):1313-1318. <https://doi.org/10.4319/lo.1992.37.6.1313>.
- Watson GE, Lynch M, Myers GJ, et al. 2011. Prenatal exposure to dental amalgam: Evidence from the Seychelles Child Development Study main cohort. *J Am Dent Assoc* 142(11):1283-1294. <https://doi.org/10.14219/jada.archive.2011.0114>.
- Watson GE, Evans K, Thurston SW, et al. 2012. Prenatal exposure to dental amalgam in the Seychelles Child Development Nutrition Study: associations with neurodevelopmental outcomes at 9 and 30 months. *Neurotoxicology* 33(6):1511-1517. <https://doi.org/10.1016/j.neuro.2012.10.001>.
- Weast RC. 1988. Mercury. In: *CRC handbook of chemistry and physics*. 69th ed. Boca Raton, FL: CRC Press Inc., B-106 to B-108, F-103.
- Webster JP, Kane TJ, Obrist D, et al. 2016. Estimating mercury emissions resulting from wildfire in forests of the Western United States. *Sci Total Environ* 568:578-586. <https://doi.org/10.1016/j.scitotenv.2016.01.166>.
- Wei H, Qiu L, Divine KK, et al. 1999. Toxicity and transport of three synthesized mercury-thiol-complexes in isolated rabbit renal proximal tubule suspensions. *Drug Chem Toxicol* 22(2):323-341. <https://doi.org/10.3109/01480549909017838>.
- Wei MH, Cui Y, Zhou HL, et al. 2021. Associations of multiple metals with bone mineral density: A population-based study in US adults. *Chemosphere* 282:131150. <https://doi.org/10.1016/j.chemosphere.2021.131150>.
- Wei Y, Lyu Y, Cao Z, et al. 2022. Association of low cadmium and mercury exposure with chronic kidney disease among Chinese adults aged ≥ 80 years: A cross-sectional study. *Chin Med J (Engl)* 135(24):2976-2983. <https://doi.org/10.1097/cm9.0000000000002395>.
- Weidenhammer W, Bornschein S, Zilker T, et al. 2010. Predictors of treatment outcomes after removal of amalgam fillings: associations between subjective symptoms, psychometric variables and mercury levels. *Community Dent Oral Epidemiol* 38(2):180-189. <https://doi.org/10.1111/j.1600-0528.2009.00523.x>.
- Weigert P. 1991. Metal loads of food of vegetable origin including mushrooms. In: Merian E, ed. *Metals and their compounds in the environment*. Weinheim, Germany: VCH, 449-468.
- Weihe P, Grandjean P, Debes F, et al. 1996. Health implications for Faroe Islanders of heavy metals and PCBs from pilot whales. *Sci Total Environ* 186(1-2):141-148.

8. REFERENCES

- Weinhouse C, Ortiz EJ, Berky AJ, et al. 2017. Hair mercury level is associated with anemia and micronutrient status in children living near artisanal and small-scale gold mining in the Peruvian Amazon. *Am J Trop Med Hyg* 97(6):1886-1897. <https://doi.org/10.4269/ajtmh.17-0269>.
- Weinstein M, Bernstein S. 2003. Pink ladies: mercury poisoning in twin girls. *Can Med Assoc J* 168(2):201.
- Weiss G. 1986. Mercury. In: Hazardous chemicals data book. 2nd ed. Rahway, NJ: Noyes Data Corp, 650-662.
- Weiss B, Stern S, Cox C, et al. 2005. Perinatal and lifetime exposure to methylmercury in the mouse: behavioral effects. *Neurotoxicology* 26(4):675-690. <https://doi.org/10.1016/j.neuro.2005.05.003>.
- Weiss-Penzias P, Sorooshian A, Coale K, et al. 2018. Aircraft measurements of total mercury and monomethyl mercury in summertime marine stratus cloudwater from Coastal California, USA. *Environ Sci Technol* 52(5):2527-2537. <https://doi.org/10.1021/acs.est.7b05395>.
- Wells EM, Herbstman JB, Lin YH, et al. 2016. Cord blood methylmercury and fetal growth outcomes in Baltimore newborns: Potential confounding and effect modification by omega-3 fatty acids, selenium, and sex. *Environ Health Perspect* 124(3):373-379. <https://doi.org/10.1289/ehp.1408596>.
- Wells EM, Herbstman JB, Lin YH, et al. 2017. Methyl mercury, but not inorganic mercury, associated with higher blood pressure during pregnancy. *Environ Res* 154:247-252. <https://doi.org/10.1016/j.envres.2017.01.013>.
- Wells EM, Kopylev L, Nachman R, et al. 2020. Seafood, wine, rice, vegetables, and other food items associated with mercury biomarkers among seafood and non-seafood consumers: NHANES 2011-2012. *J Expo Sci Environ Epidemiol* 30(3):504-514. <https://doi.org/10.1038/s41370-020-0206-6>.
- Wen J, Giri M, Xu L, et al. 2023. Association between exposure to selected heavy metals and blood eosinophil counts in asthmatic adults: Results from NHANES 2011-2018. *J Clin Med* 12(4):1543. <https://doi.org/10.3390/jcm12041543>.
- Wendroff AP. 1990. Domestic mercury pollution. *Nature* 347(6294):623-623. <https://doi.org/10.1038/347623a0>.
- Wendroff AP. 1991. Bringing attention to mercury threat. *SfAA News* 2(1):3-5. https://www.appliedanthro.org/application/files/6815/8870/3319/Feb_1991.pdf. January 15, 2021.
- Wennberg M, Bergdahl IA, Hallmans G, et al. 2011. Fish consumption and myocardial infarction: a second prospective biomarker study from northern Sweden. *Am J Clin Nutr* 93(1):27-36. <https://doi.org/10.3945/ajcn.2010.29408>.
- Wennberg M, Stromberg U, Bergdahl IA, et al. 2012. Myocardial infarction in relation to mercury and fatty acids from fish: a risk-benefit analysis based on pooled Finnish and Swedish data in men. *Am J Clin Nutr* 96(4):706-713. <https://doi.org/10.3945/ajcn.111.033795>.
- Wesolowska M, Yeates AJ, McSorley EM, et al. 2023. Potential role of selenium in modifying the effect of maternal methylmercury exposure on child neurodevelopment - A review. *Neurotoxicology* 99:59-69. <https://doi.org/10.1016/j.neuro.2023.08.003>.
- Weyde KVF, Olsen AK, Duale N, et al. 2021. Gestational blood levels of toxic metal and essential element mixtures and associations with global DNA methylation in pregnant women and their infants. *Sci Total Environ* 787:147621. <https://doi.org/10.1016/j.scitotenv.2021.147621>.
- WHO. 1990. Methyl mercury. Environmental health criteria. Geneva, Switzerland: World Health Organization. EHC 101. <http://www.inchem.org/documents/ehc/ehc/ehc101.htm>. January 15, 2021.
- WHO. 1991. Inorganic mercury. Environmental health criteria. Geneva, Switzerland: World Health Organization. EHC 118. <http://www.inchem.org/documents/ehc/ehc/ehc118.htm> January 15, 2021.
- WHO. 2000. Air quality guidelines for Europe. Geneva, Switzerland: World Health Organization. <https://apps.who.int/iris/handle/10665/107335>. April 18, 2023.
- WHO. 2004. Methylmercury (addendum). World Health Organization. WHO Food Additives Series 52. <http://www.inchem.org/documents/jecfa/jecmono/v52je23.htm>. January 19, 2021.
- WHO. 2007. Methyl mercury. Safety evaluation of certain food additives and contaminants: prepared by the sixty-seventh meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA). Geneva, Switzerland: World Health Organization. WHO food additives series 58.

8. REFERENCES

- <https://apps.who.int/food-additives-contaminants-jecfa-database/Document/Index/9006>. April 18, 2023.
- WHO. 2010. Children's exposure to mercury compounds. Geneva, Switzerland: World Health Organization. <https://www.who.int/publications/i/item/9789241500456>. January 15, 2021.
- WHO. 2011. Mercury (addendum). Safety evaluation of certain contaminants in food: prepared by the seventy-second meeting of the Joint FAO/WHO Expert Committee on Food Additives (JECFA). Geneva, Switzerland: World Health Organization. WHO Food Additives Series 63. <https://apps.who.int/food-additives-contaminants-jecfa-database/Document/Index/8996>. April 18, 2023.
- WHO. 2022. Guidelines for drinking-water quality. Fourth edition incorporating the first and second addenda. World Health Organization. <https://www.who.int/publications/i/item/9789240045064>. June 22, 2022.
- Wiener JG, Fitzgerald WF, Watras CJ, et al. 1990. Partitioning and bioavailability of mercury in an experimentally acidified Wisconsin Lake. *Environ Toxicol Chem* 9(7):909-918.
- Wiggers GA, Pecanha FM, Briones AM, et al. 2008. Low mercury concentrations cause oxidative stress and endothelial dysfunction in conductance and resistance arteries. *Am J Physiol Heart Circ Physiol* 295(3):H1033-H1043. <https://doi.org/10.1152/ajpheart.00430.2008>.
- Wild LG, Ortega HG, Lopez M, et al. 1997. Immune system alteration in the rat after indirect exposure to methyl mercury chloride or methyl mercury sulfide. *Environ Res* 74(1):34-42. <https://doi.org/10.1006/enrs.1997.3748>.
- Wildemann TM, Mirhosseini N, Siciliano SD, et al. 2015a. Cardiovascular responses to lead are biphasic, while methylmercury, but not inorganic mercury, monotonically increases blood pressure in rats. *Toxicology* 328:1-11. <https://doi.org/10.1016/j.tox.2014.11.009>.
- Wildemann TM, Weber LP, Siciliano SD. 2015b. Combined exposure to lead, inorganic mercury and methylmercury shows deviation from additivity for cardiovascular toxicity in rats. *J Appl Toxicol* 35(8):918-926. <https://doi.org/10.1002/jat.3092>.
- Wildemann TM, Siciliano SD, Weber LP. 2016. The mechanisms associated with the development of hypertension after exposure to lead, mercury species or their mixtures differs with the metal and the mixture ratio. *Toxicology* 339:1-8. <https://doi.org/10.1016/j.tox.2015.11.004>.
- Willes RF, Truelove JF, Nera EA. 1978. Neurotoxic response of infant monkeys to methylmercury. *Toxicology* 9(1-2):125-135. [https://doi.org/10.1016/0300-483x\(78\)90037-9](https://doi.org/10.1016/0300-483x(78)90037-9).
- Willett KL, Turner RR, Beauchamp JJ. 1992. Effect of chemical form of mercury on the performance of dosed soils in standard leaching protocols: EP and TCLP. *Hazard Waste Hazard Mater* 9(3):275-288.
- Williams MV, Winters T, Waddell KS. 1987. In-vivo effects of mercury (II) on deoxyuridine triphosphate nucleotidohydrolase, DNA polymerase (α , β), and uracil-DNA glycosylase activities in cultured human cells: Relationship to DNA damage, DNA repair, and cytotoxicity. *Mol Pharmacol* 31(2):200-207.
- Williston SH. 1968. Mercury in the atmosphere. *J Geophys Res* 73:7051-7055.
- Windham-Myers L, Marvin-DiPasquale M, Kakouros E, et al. 2014. Mercury cycling in agricultural and managed wetlands of California, USA: seasonal influences of vegetation on mercury methylation, storage, and transport. *Sci Total Environ* 484:308-318. <https://doi.org/10.1016/j.scitotenv.2013.05.027>.
- Wirth JJ, Mijal RS. 2010. Adverse effects of low level heavy metal exposure on male reproductive function. *Syst Biol Reprod Med* 56(2):147-167. <https://doi.org/10.3109/19396360903582216>.
- Wong PK. 1988. Mutagenicity of heavy metals. *Bull Environ Contam Toxicol* 40(4):597-603. <https://doi.org/10.1007/bf01688386>.
- Wood JM. 1974. Biological cycles for toxic elements in the environment. *Science* 183(4129):1049-1052. <https://doi.org/10.1126/science.183.4129.1049>.

8. REFERENCES

- Woods JS, Echeverria D, Heyer NJ, et al. 2005. The association between genetic polymorphisms of coproporphyrinogen oxidase and an atypical porphyrinogenic response to mercury exposure in humans. *Toxicol Appl Pharmacol* 206(2):113-120. <https://doi.org/10.1016/j.taap.2004.12.016>.
- Woods JS, Martin MD, Leroux BG, et al. 2007. The contribution of dental amalgam to urinary mercury excretion in children. *Environ Health Perspect* 115(10):1527-1531. <https://doi.org/10.1289/ehp.10249>.
- Woods JS, Martin MD, Leroux BG, et al. 2008. Biomarkers of kidney integrity in children and adolescents with dental amalgam mercury exposure: findings from the Casa Pia children's amalgam trial. *Environ Res* 108(3):393-399. <https://doi.org/10.1016/j.envres.2008.07.003>.
- Woods JS, Martin MD, Leroux BG, et al. 2009. Urinary porphyrin excretion in children with mercury amalgam treatment: findings from the Casa Pia Children's Dental Amalgam Trial. *J Toxicol Environ Health A* 72(14):891-896. <https://doi.org/10.1080/15287390902959557>.
- Woods JS, Heyer NJ, Echeverria D, et al. 2012. Modification of neurobehavioral effects of mercury by a genetic polymorphism of coproporphyrinogen oxidase in children. *Neurotoxicol Teratol* 34(5):513-521. <https://doi.org/10.1016/j.ntt.2012.06.004>.
- Woods JS, Heyer NJ, Russo JE, et al. 2013. Modification of neurobehavioral effects of mercury by genetic polymorphisms of metallothionein in children. *Neurotoxicol Teratol* 39:36-44. <https://doi.org/10.1016/j.ntt.2013.06.004>.
- Woods JS, Heyer NJ, Russo JE, et al. 2014. Genetic polymorphisms affecting susceptibility to mercury neurotoxicity in children: summary findings from the Casa Pia Children's Amalgam clinical trial. *Neurotoxicology* 44:288-302. <https://doi.org/10.1016/j.neuro.2014.07.010>.
- WQP. 2024. Mercury. Water quality portal. Advisory Committee on Water Information (ACWI); Agricultural Research Service (ARS); Environmental Protection Agency (EPA); National Water Quality Monitoring Council (NWQMC); United States Geological Survey (USGS). <https://www.waterqualitydata.us/portal/>. February 26, 2024.
- Wright DL, Afeiche MC, Ehrlich S, et al. 2015. Hair mercury concentrations and in vitro fertilization (IVF) outcomes among women from a fertility clinic. *Reprod Toxicol* 51:125-132. <https://doi.org/10.1016/j.reprotox.2015.01.003>.
- Wu G. 1995. Screening of potential transport systems for methyl mercury uptake in rat erythrocytes at 5 degrees by use of inhibitors and substrates. *Pharmacol Toxicol* 77(3):169-176.
- Wu G. 1996. Methylmercury-cysteine uptake by rat erythrocytes: evidence for several transport systems. *J Appl Toxicol* 16(1):77-83. [https://doi.org/10.1002/\(sici\)1099-1263\(199601\)16:1<77::aid-jat319>3.0.co;2-c](https://doi.org/10.1002/(sici)1099-1263(199601)16:1<77::aid-jat319>3.0.co;2-c).
- Wu G. 1997. Effect of probenecid on the transport of methyl mercury in erythrocytes by the organic anion transport system. *Arch Toxicol* 71(4):218-222.
- Wu J, Ying T, Shen Z, et al. 2014. Effect of low-level prenatal mercury exposure on neonate neurobehavioral development in China. *Pediatr Neurol* 51(1):93-99. <https://doi.org/10.1016/j.pediatrneurol.2014.03.018>.
- Wu X, Cobbina SJ, Mao G, et al. 2016. A review of toxicity and mechanisms of individual and mixtures of heavy metals in the environment. *Environ Sci Pollut Res Int* 23(9):8244-8259. <https://doi.org/10.1007/s11356-016-6333-x>.
- Wu P, Kainz MJ, Bravo AG, et al. 2019. The importance of bioconcentration into the pelagic food web base for methylmercury biomagnification: A meta-analysis. *Sci Total Environ* 646:357-367. <https://doi.org/10.1016/j.scitotenv.2018.07.328>.
- Wu B, Qu Y, Lu Y, et al. 2022. Mercury may reduce the protective effect of sea fish consumption on serum triglycerides levels in Chinese adults: Evidence from China National Human Biomonitoring. *Environ Pollut* 311:119904. <https://doi.org/10.1016/j.envpol.2022.119904>.
- Wu X, Li P, Tao J, et al. 2023. Subchronic low-dose methylmercury exposure accelerated cerebral telomere shortening in relevant with declined urinary aMT6s level in rats. *Toxics* 11(2):191. <https://doi.org/10.3390/toxics11020191>.

8. REFERENCES

- Wulf HC, Kromann N, Kousgaard N, et al. 1986. Sister chromatid exchange (SCE) in Greenlandic Eskimos. Dose-response relationship between SCE and seal diet, smoking, and blood cadmium and mercury concentrations. *Sci Total Environ* 48(1-2):81-94. [https://doi.org/10.1016/0048-9697\(86\)90155-5](https://doi.org/10.1016/0048-9697(86)90155-5).
- Wyatt L, Permar SR, Ortiz E, et al. 2019. Mercury exposure and poor nutritional status reduce response to six expanded program on immunization vaccines in children: an observational cohort study of communities affected by gold mining in the Peruvian Amazon. *Int J Environ Res Public Health* 16(4):638. <https://doi.org/10.3390/ijerph16040638>.
- Xiong J, Lv Y, Wei Y, et al. 2022. Association of blood mercury exposure with depressive symptoms in the Chinese oldest old. *Ecotoxicol Environ Saf* 243:113976. <https://doi.org/10.1016/j.ecoenv.2022.113976>.
- Xu Y, Khoury JC, Sucharew H, et al. 2016. Low-level gestational exposure to mercury and maternal fish consumption: Associations with neurobehavior in early infancy. *Neurotoxicol Teratol* 54:61-67. <https://doi.org/10.1016/j.ntt.2016.02.002>.
- Xu J, Engel LS, Rhoden J, et al. 2021. The association between blood metals and hypertension in the GuLF study. *Environ Res* 202:111734. <https://doi.org/10.1016/j.envres.2021.111734>.
- Xu R, Meng X, Pang Y, et al. 2022a. Associations of maternal exposure to 41 metals/metalloids during early pregnancy with the risk of spontaneous preterm birth: Does oxidative stress or DNA methylation play a crucial role? *Environ Int* 158:106966. <https://doi.org/10.1016/j.envint.2021.106966>.
- Xu S, Hansen S, Sripada K, et al. 2022b. Maternal blood levels of toxic and essential elements and birth outcomes in Argentina: The EMASAR study. *Int J Environ Res Public Health* 19(6):3643. <https://doi.org/10.3390/ijerph19063643>.
- Xu J, Zhu X, Hui R, et al. 2022c. Associations of metal exposure with hyperuricemia and gout in general adults. *Front Endocrinol (Lausanne)* 13:1052784. <https://doi.org/10.3389/fendo.2022.1052784>.
- Xu W, Park SK, Gruninger SE, et al. 2023a. Associations between mercury exposure with blood pressure and lipid levels: A cross-sectional study of dental professionals. *Environ Res* 220:115229. <https://doi.org/10.1016/j.envres.2023.115229>.
- Xu K, Gao B, Liu T, et al. 2023b. Association of blood mercury levels with bone mineral density in adolescents aged 12-19. *Environ Sci Pollut Res Int* 30(16):46933-46939. <https://doi.org/10.1007/s11356-023-25701-6>.
- Xue F, Holzman C, Rahbar MH, et al. 2007. Maternal fish consumption, mercury levels, and risk of preterm delivery. *Environ Health Perspect* 115(1):42-47. <https://doi.org/10.1289/ehp.9329>.
- Yaginuma-Sakurai K, Murata K, Iwai-Shimada M, et al. 2012. Hair-to-blood ratio and biological half-life of mercury: experimental study of methylmercury exposure through fish consumption in humans. *J Toxicol Sci* 37(1):123-130.
- Yahyazadeh A, Altunkaynak BZ, Akgul N, et al. 2017. A histopathological and stereological study of liver damage in female rats caused by mercury vapor. *Biotech Histochem* 92(5):338-346. <https://doi.org/10.1080/10520295.2017.1312527>.
- Yalçın SS, Erdal İ, Oğuz B, et al. 2022. Associations between toxic elements and blood pressure parameters in adolescents. *J Trace Elem Med Biol* 71:126949. <https://doi.org/10.1016/j.jtemb.2022.126949>.
- Yamaguchi S, Matsumoto H, Kaku S, et al. 1975. Factors affecting the amount of mercury in human scalp hair. *Am J Public Health* 65(5):484-488.
- Yamamoto R, Suzuki T. 1978. Effects of artificial hair-waving on hair mercury values. *Int Arch Occup Environ Health* 42(1):1-9. <https://doi.org/10.1007/bf00385706>.
- Yang J, Jiang Z, Wang Y, et al. 1997. Maternal-fetal transfer of metallic mercury via the placenta and milk. *Ann Clin Lab Sci* 27:135-141.
- Yang YJ, Yang EJ, Park K, et al. 2021. Association between blood mercury levels and non-alcoholic fatty liver disease in non-obese populations: The Korean National Environmental Health Survey

8. REFERENCES

- (KoNEHS) 2012-2014. *Int J Environ Res Public Health* 18(12):6412. <https://doi.org/10.3390/ijerph18126412>.
- Yang D, Zhu H, Chen H, et al. 2023. Association between serum trace heavy metals and liver function among adolescents. *J Occup Environ Med* 65(3):e155-e160. <https://doi.org/10.1097/jom.0000000000002778>.
- Yannai S, Sachs KM. 1993. Absorption and accumulation of cadmium, lead and mercury from foods by rats. *Food Chem Toxicol* 31(5):351-335.
- Yannai S, Berdicevsky I, Duek L. 1991. Transformations of inorganic mercury by *Candida albicans* and *Saccharomyces cerevisiae*. *Appl Environ Microbiol* 57(1):245-247.
- Yao B, Lu X, Xu L, et al. 2020. Relationship between low-level lead, cadmium and mercury exposures and blood pressure in children and adolescents aged 8-17 years: An exposure-response analysis of NHANES 2007-2016. *Sci Total Environ* 726:138446. <https://doi.org/10.1016/j.scitotenv.2020.138446>.
- Yasuda Y, Datu AR, Hirata S, et al. 1985. Characteristics of growth and palatal shelf development in ICR mice after exposure to methylmercury. *Teratology* 32(2):273-286. <https://doi.org/10.1002/tera.1420320216>.
- Yasutake A, Hirayama K. 2001. Evaluation of methylmercury biotransformation using rat liver slices. *Arch Toxicol* 75(7):400-406.
- Yasutake A, Hachiya N. 2006. Accumulation of inorganic mercury in hair of rats exposed to methylmercury or mercuric chloride. *Tohoku J Exp Med* 210(4):301-306.
- Yasutake A, Nakamura M. 2011. Induction by mercury compounds of metallothioneins in mouse tissues: inorganic mercury accumulation is not a dominant factor for metallothionein induction in the liver. *J Toxicol Sci* 36(3):365-372.
- Yasutake A, Hirayama K, Inoue M. 1989. Mechanism of urinary excretion of methylmercury in mice. *Arch Toxicol* 63(6):479-483.
- Yasutake A, Hirayama Y, Inouye M. 1991. Sex difference of nephrotoxicity by methylmercury in mice. In: Bach PH, Ulrich KJ, eds. *Nephrotoxicity: Mechanisms, early diagnosis, and therapeutic management; Fourth International symposium on nephrotoxicity*, Guilford, England, UK, 1989. New York, NY: Marcel Dekker, Inc., 389-396.
- Yasutake A, Nakano A, Miyamoto K, et al. 1997. Chronic effects of methylmercury in rats. I. Biochemical aspects. *Tohoku J Exp Med* 182(3):185-196.
- Yasutake A, Matsumoto M, Yamaguchi M, et al. 2003. Current hair mercury levels in Japanese: survey in five districts. *Tohoku J Exp Med* 199(3):161-169.
- Yau VM, Green PG, Alaimo CP, et al. 2014. Prenatal and neonatal peripheral blood mercury levels and autism spectrum disorders. *Environ Res* 133:294-303. <https://doi.org/10.1016/j.envres.2014.04.034>.
- Yawei S, Jianhai L, Junxiu Z, et al. 2021. Epidemiology, clinical presentation, treatment, and follow-up of chronic mercury poisoning in China: a retrospective analysis. *BMC Pharmacol Toxicol* 22(1):25. <https://doi.org/10.1186/s40360-021-00493-y>.
- Ye X, Qian H, Xu P, et al. 2009. Nephrotoxicity, neurotoxicity, and mercury exposure among children with and without dental amalgam fillings. *Int J Hyg Environ Health* 212(4):378-386. <https://doi.org/10.1016/j.ijheh.2008.09.004>.
- Ye Z, Mao H, Lin CJ, et al. 2016. Investigation of processes controlling summertime gaseous elemental mercury oxidation at midlatitudinal marine, coastal, and inland sites. *Atmos Chem Phys* 16(13):8461-8478. <https://doi.org/10.5194/acp-16-8461-2016>.
- Yeates KO, Mortensen ME. 1994. Acute and chronic neuropsychological consequences of mercury vapor poisoning in two early adolescents. *J Clin Exp Neuropsychol* 16(2):209-222. <https://doi.org/10.1080/01688639408402632>.
- Yeates AJ, Zavez A, Thurston SW, et al. 2020. Maternal long-chain polyunsaturated fatty acid status, methylmercury exposure, and birth outcomes in a high-fish-eating mother-child cohort. *J Nutr* 150(7):1749-1756. <https://doi.org/10.1093/jn/nxaa131>.

8. REFERENCES

- Yen CC, Chen HH, Hsu YT, et al. 2022. Effects of heavy metals in acute ischemic stroke patients: A cross-sectional study. *Medicine (Baltimore)* 101(9):e28973. <https://doi.org/10.1097/md.00000000000028973>.
- Yess NJ. 1993. U.S. Food and Drug Administration survey of methyl mercury in canned tuna. *J AOAC Int* 76(1):36-38.
- Yildirim E, Derici MK, Demir E, et al. 2019. Is the Concentration of Cadmium, Lead, Mercury, and Selenium Related to Preterm Birth? *Biol Trace Elem Res* 191(2):306-312. <https://doi.org/10.1007/s12011-018-1625-2>.
- Yilmaz OH, Karakulak UN, Tutkun E, et al. 2016. Assessment of the cardiac autonomic nervous system in mercury-exposed individuals via post-exercise heart rate recovery. *Med Princ Pract* 25(4):343-349. <https://doi.org/10.1159/000445322>.
- Yin R, Feng X, Meng B. 2013. Stable mercury isotope variation in rice plants (*Oryza sativa* L.) from the Wanshan mercury mining district, SW China. *Environ Sci Technol* 47(5):2238-2245. <https://doi.org/10.1021/es304302a>.
- Yin L, Yu K, Lin S, et al. 2016. Associations of blood mercury, inorganic mercury, methyl mercury and bisphenol A with dental surface restorations in the U.S. population, NHANES 2003-2004 and 2010-2012. *Ecotoxicol Environ Saf* 134P1:213-225. <https://doi.org/10.1016/j.ecoenv.2016.09.001>.
- Yin L, Lin S, Summers AO, et al. 2021. Children with amalgam dental restorations have significantly elevated blood and urine mercury levels. *Toxicol Sci* 184(1):104-126. <https://doi.org/10.1093/toxsci/kfab108>.
- Yin L, Lin S, Summers AO, et al. 2022. Corrigendum to: Children with amalgam dental restorations have significantly elevated blood and urine mercury levels. *Toxicol Sci* 186(1):174. <https://doi.org/10.1093/toxsci/kfab156>.
- Yip RK, Chang LW. 1981. Vulnerability of dorsal root neurons and fibers toward methylmercury toxicity: a morphological evaluation. *Environ Res* 26(1):152-167. [https://doi.org/10.1016/0013-9351\(81\)90194-8](https://doi.org/10.1016/0013-9351(81)90194-8).
- Ynalvez R, Gutierrez J, Gonzalez-Cantu H. 2016. Mini-review: toxicity of mercury as a consequence of enzyme alteration. *Biometals* 29(5):781-788. <https://doi.org/10.1007/s10534-016-9967-8>.
- Yokoo EM, Valente JG, Grattan L, et al. 2003. Low level methylmercury exposure affects neuropsychological function in adults. *Environ Health* 2(1):8. <https://doi.org/10.1186/1476-069x-2-8>.
- Yoo JI, Ha YC, Lee YK, et al. 2016. High levels of heavy metals increase the prevalence of sarcopenia in the elderly population. *J Bone Metab* 23(2):101-109. <https://doi.org/10.11005/jbm.2016.23.2.101>.
- Yorifuji T, Tsuda T, Takao S, et al. 2008. Long-term exposure to methylmercury and neurologic signs in Minamata and neighboring communities. *Epidemiology* 19(1):3-9. <https://doi.org/10.1097/EDE.0b013e31815c09d2>.
- Yorifuji T, Tsuda T, Takao S, et al. 2009. Total mercury content in hair and neurologic signs: historic data from Minamata. *Epidemiology* 20(2):188-193. <https://doi.org/10.1097/EDE.0b013e318190e73f>.
- Yorifuji T, Tsuda T, Kashima S, et al. 2010. Long-term exposure to methylmercury and its effects on hypertension in Minamata. *Environ Res* 110(1):40-46. <https://doi.org/10.1016/j.envres.2009.10.011>.
- Yorifuji T, Tsuda T, Inoue S, et al. 2011. Long-term exposure to methylmercury and psychiatric symptoms in residents of Minamata, Japan. *Environ Int* 37(5):907-913. <https://doi.org/10.1016/j.envint.2011.03.008>.
- Yorifuji T, Murata K, Bjerve KS, et al. 2013. Visual evoked potentials in children prenatally exposed to methylmercury. *Neurotoxicology* 37:15-18. <https://doi.org/10.1016/j.neuro.2013.03.009>.
- Yorifuji T, Kato T, Kado Y, et al. 2015. Intrauterine exposure to methylmercury and neurocognitive functions: Minamata disease. *Arch Environ Occup Health* 70(5):297-302. <https://doi.org/10.1080/19338244.2014.904268>.

8. REFERENCES

- Yorifuji T, Kado Y, Diez MH, et al. 2016. Neurological and neurocognitive functions from intrauterine methylmercury exposure. *Arch Environ Occup Health* 71(3):170-177. <https://doi.org/10.1080/19338244.2015.1080153>.
- Yorifuji T, Takaoka S, Grandjean P. 2018. Accelerated functional losses in ageing congenital Minamata disease patients. *Neurotoxicol Teratol* 69:49-53. <https://doi.org/10.1016/j.ntt.2018.08.001>.
- Yorifuji T, Kadowaki T, Yasuda M, et al. 2023. Neurological and neurocognitive impairments in adults with a history of prenatal methylmercury poisoning: Minamata disease. *Int J Environ Res Public Health* 20(12):6173. <https://doi.org/10.3390/ijerph20126173>.
- Yoshida M, Satoh M, Shimada A, et al. 2002. Maternal-to-fetus transfer of mercury in metallothionein-null pregnant mice after exposure to mercury vapor. *Toxicology* 175(1-3):215-222. [https://doi.org/10.1016/s0300-483x\(02\)00084-7](https://doi.org/10.1016/s0300-483x(02)00084-7).
- Yoshida M, Suzuki M, Satoh M, et al. 2011. Neurobehavioral effects of combined prenatal exposure to low-level mercury vapor and methylmercury. *J Toxicol Sci* 36(1):73-80. <https://doi.org/10.2131/jts.36.73>.
- Yoshida M, Watanabe C, Honda A, et al. 2013. Emergence of delayed behavioral effects in offspring mice exposed to low levels of mercury vapor during the lactation period. *J Toxicol Sci* 38(1):1-6. <https://doi.org/10.2131/jts.38.1>.
- Yoshida M, Lee JY, Satoh M, et al. 2018. Neurobehavioral effects of postnatal exposure to low-level mercury vapor and/or methylmercury in mice. *J Toxicol Sci* 43(1):11-17. <https://doi.org/10.2131/jts.43.11>.
- Yoshimasu K, Kiyohara C, Takemura S, et al. 2014. A meta-analysis of the evidence on the impact of prenatal and early infancy exposures to mercury on autism and attention deficit/hyperactivity disorder in the childhood. *Neurotoxicology* 44:121-131. <https://doi.org/10.1016/j.neuro.2014.06.007>.
- Yoshizawa K, Rimm EB, Morris JS, et al. 2002. Mercury and the risk of coronary heart disease in men. *N Engl J Med* 347(22):1755-1760. <https://doi.org/10.1056/NEJMoa021437>.
- You CH, Kim BG, Kim YM, et al. 2014. Relationship between dietary mercury intake and blood mercury level in Korea. *J Korean Med Sci* 29(2):176-182. <https://doi.org/10.3346/jkms.2014.29.2.176>.
- You SH, Wang SL, Pan WH, et al. 2018. Risk assessment of methylmercury based on internal exposure and fish and seafood consumption estimates in Taiwanese children. *Int J Hyg Environ Health* 221(4):697-703. <https://doi.org/10.1016/j.ijheh.2018.03.002>.
- Young JF, Wosilait WD, Luecke RH. 2001. Analysis of methylmercury disposition in humans utilizing a PBPK model and animal pharmacokinetic data. *J Toxicol Environ Health A* 63(1):19-52. <https://doi.org/10.1080/152873901750128344>.
- Young EC, Davidson PW, Wilding G, et al. 2020. Association between prenatal dietary methyl mercury exposure and developmental outcomes on acquisition of articulatory-phonologic skills in children in the Republic of Seychelles. *Neurotoxicology* 81:353-357. <https://doi.org/10.1016/j.neuro.2020.09.028>.
- Yu Y, Gao M, Wang X, et al. 2019. Recommended acceptable levels of maternal serum typical toxic metals from the perspective of spontaneous preterm birth in Shanxi Province, China. *Sci Total Environ* 686:599-605. <https://doi.org/10.1016/j.scitotenv.2019.05.413>.
- Zalups RK. 1995. Organic anion transport and action of gamma-glutamyl transpeptidase in kidney linked mechanistically to renal tubular uptake of inorganic mercury. *Toxicol Appl Pharmacol* 132(2):289-298. <https://doi.org/10.1006/taap.1995.1110>.
- Zalups RK. 1998. Intestinal handling of mercury in the rat: Implications of intestinal secretion of inorganic mercury following biliary ligation or cannulation. *J Toxicol Environ Health A* 53(8):615-636. <https://doi.org/10.1080/009841098159079>.
- Zalups RK. 2000. Molecular interactions with mercury in the kidney. *Pharmacol Rev* 52(1):113-143.
- Zalups RK, Barfuss D. 1990. Accumulation of inorganic mercury along the renal proximal tubule of the rabbit. *Toxicol Appl Pharmacol* 106(2):245-253. [https://doi.org/10.1016/0041-008x\(90\)90244-o](https://doi.org/10.1016/0041-008x(90)90244-o).

8. REFERENCES

- Zalups RK, Cherian MG. 1992. Renal metallothionein metabolism after a reduction of renal mass. II. Effect of zinc pretreatment on the renal toxicity and intrarenal accumulation of inorganic mercury. *Toxicology* 71(1-2):103-117.
- Zalups RK, Minor KH. 1995. Luminal and basolateral mechanisms involved in the renal tubular uptake of inorganic mercury. *J Toxicol Environ Health* 46(1):73-100. <https://doi.org/10.1080/15287399509532019>.
- Zalups RK, Lash LH. 1997. Binding of mercury in renal brush-border and basolateral membrane-vesicles. *Biochem Pharmacol* 53(12):1889-1900. [https://doi.org/10.1016/s0006-2952\(97\)00138-x](https://doi.org/10.1016/s0006-2952(97)00138-x).
- Zalups RK, Ahmad S. 2004. Homocysteine and the renal epithelial transport and toxicity of inorganic mercury: role of basolateral transporter organic anion transporter 1. *J Am Soc Nephrol* 15(8):2023-2031. <https://doi.org/10.1097/01.asn.0000135115.63412.a9>.
- Zalups RK, Diamond GL. 2005. Nephrotoxicology of metals. In: Tarloff JB, Lash LH, eds. *Toxicology of the kidney*. 3rd ed. Boca Raton, FL: CRC Press, 767-814.
- Zalups RK, Ahmad S. 2005a. Handling of cysteine S-conjugates of methylmercury in MDCK cells expressing human OAT1. *Kidney Int* 68(4):1684-1699. <https://doi.org/10.1111/j.1523-1755.2005.00585.x>.
- Zalups RK, Ahmad S. 2005b. Handling of the homocysteine S-conjugate of methylmercury by renal epithelial cells: role of organic anion transporter 1 and amino acid transporters. *J Pharmacol Exp Ther* 315(2):896-904. <https://doi.org/10.1124/jpet.105.090530>.
- Zalups RK, Ahmad S. 2005c. Transport of N-acetylcysteine s-conjugates of methylmercury in Madin-Darby canine kidney cells stably transfected with human isoform of organic anion transporter 1. *J Pharmacol Exp Ther* 314(3):1158-1168. <https://doi.org/10.1124/jpet.105.086645>.
- Zalups RK, Bridges CC. 2012. Relationships between the renal handling of DMPS and DMSA and the renal handling of mercury. *Chem Res Toxicol* 25(9):1825-1838. <https://doi.org/10.1021/tx3001847>.
- Zalups RK, Barfuss DW, Kostyniak PJ. 1992. Altered intrarenal accumulation of mercury in uninephrectomized rats treated with methylmercury chloride. *Toxicol Appl Pharmacol* 115(2):174-182.
- Zalups RK, Knutson KL, Schnellmann RG. 1993. In vitro analysis of the accumulation and toxicity of inorganic mercury in segments of the proximal tubule isolated from the rabbit kidney. *Toxicol Appl Pharmacol* 119(2):221-227.
- Zalups RK, Barfuss DW, Lash LH. 1999. Disposition of inorganic mercury following biliary obstruction and chemically induced glutathione depletion: dispositional changes one hour after the intravenous administration of mercuric chloride. *Toxicol Appl Pharmacol* 154(2):135-144. <https://doi.org/10.1006/taap.1998.8562>.
- Zalups RK, Aslamkhan AG, Ahmad S. 2004. Human organic anion transporter 1 mediates cellular uptake of cysteine-S conjugates of inorganic mercury. *Kidney Int* 66(1):251-261. <https://doi.org/10.1111/j.1523-1755.2004.00726.x>.
- Zanoli P, Truzzi C, Veneri C, et al. 1994. Methyl mercury during late gestation affects temporarily the development of cortical muscarinic receptors in rat offspring. *Pharmacol Toxicol* 75(5):261-264. <https://doi.org/10.1111/j.1600-0773.1994.tb00358.x>.
- Zareba G, Cernichiari E, Goldsmith LA, et al. 2008. Validity of methyl mercury hair analysis: mercury monitoring in human scalp/nude mouse model. *J Appl Toxicol* 28(4):535-542. <https://doi.org/10.1002/jat.1307>.
- Zareba W, Thurston SW, Zareba G, et al. 2019. Prenatal and recent methylmercury exposure and heart rate variability in young adults: the Seychelles Child Development Study. *Neurotoxicol Teratol* 74:106810. <https://doi.org/10.1016/j.ntt.2019.106810>.
- Zasukhina GD, Vasilyeva IM, Sdirkova NI, et al. 1983. Mutagenic effect of thallium and mercury salts on rodent cells with different repair activities. *Mutat Res* 124(2):163-173.
- Zayas LH, Ozuah PO. 1996. Mercury use in espiritismo: a survey of botanicas. *Am J Public Health* 86(1):111-112. <https://doi.org/10.2105/ajph.86.1.111>.

8. REFERENCES

- Zefferino R, Piccoli C, Ricciardi N, et al. 2017. Possible mechanisms of mercury toxicity and cancer promotion: Involvement of gap junction intercellular communications and inflammatory cytokines. *Oxid Med Cell Longev* 2017:1-6. <https://doi.org/10.1155/2017/7028583>.
- Zeng Q, Zhou B, Feng W, et al. 2013. Associations of urinary metal concentrations and circulating testosterone in Chinese men. *Reprod Toxicol* 41:109-114. <https://doi.org/10.1016/j.reprotox.2013.06.062>.
- Zeng Q, Feng W, Zhou B, et al. 2015. Urinary metal concentrations in relation to semen quality: A cross-sectional study in China. *Environ Sci Technol* 49(8):5052-5059. <https://doi.org/10.1021/es5053478>.
- Zhai Q, Cen S, Jiang J, et al. 2019. Disturbance of trace element and gut microbiota profiles as indicators of autism spectrum disorder: A pilot study of Chinese children. *Environ Res* 171:501-509. <https://doi.org/10.1016/j.envres.2019.01.060>.
- Zhang Y, Bolivar VJ, Lawrence DA. 2013. Maternal exposure to mercury chloride during pregnancy and lactation affects the immunity and social behavior of offspring. *Toxicol Sci* 133(1):101-111. <https://doi.org/10.1093/toxsci/kft023>.
- Zhang H, Feng X, Larssen T, et al. 2010. In inland China, rice, rather than fish, is the major pathway for methylmercury exposure. *Environ Health Perspect* 118(9):1183-1188. <https://doi.org/10.1289/ehp.1001915>.
- Zhang Y, Gao D, Bolivar VJ, et al. 2011. Induction of autoimmunity to brain antigens by developmental mercury exposure. *Toxicol Sci* 119(2):270-280. <https://doi.org/10.1093/toxsci/kfq334>.
- Zhang BB, Li WK, Hou WY, et al. 2017. Zuotai and HgS differ from HgCl₂ and methyl mercury in Hg accumulation and toxicity in weanling and aged rats. *Toxicol Appl Pharmacol* 331:76-84. <https://doi.org/10.1016/j.taap.2017.05.021>.
- Zhang C, Wu HB, Cheng MX, et al. 2019. Association of exposure to multiple metals with papillary thyroid cancer risk in China. *Environ Sci Pollut Res Int* 26(20):20560-20572. <https://doi.org/10.1007/s11356-019-04733-x>.
- Zhang Y, Huo X, Lu X, et al. 2020a. Exposure to multiple heavy metals associate with aberrant immune homeostasis and inflammatory activation in preschool children. *Chemosphere* 257:127257. <https://doi.org/10.1016/j.chemosphere.2020.127257>.
- Zhang C, Gan C, Ding L, et al. 2020b. Maternal inorganic mercury exposure and renal effects in the Wanshan mercury mining area, southwest China. *Ecotoxicol Environ Saf* 189:109987. <https://doi.org/10.1016/j.ecoenv.2019.109987>.
- Zhang J, Wang J, Hu J, et al. 2021a. Associations of total blood mercury and blood methylmercury concentrations with diabetes in adults: An exposure-response analysis of 2005-2018 NHANES. *J Trace Elem Med Biol* 68:126845. <https://doi.org/10.1016/j.jtemb.2021.126845>.
- Zhang M, Liu T, Wang G, et al. 2021b. In utero exposure to heavy metals and trace elements and childhood blood pressure in a U.S. urban, low-income, minority birth cohort. *Environ Health Perspect* 129(6):67005. <https://doi.org/10.1289/EHP8325>.
- Zhang Y, Chen T, Zhang Y, et al. 2021c. Contribution of trace element exposure to gestational diabetes mellitus through disturbing the gut microbiome. *Environ Int* 153:106520. <https://doi.org/10.1016/j.envint.2021.106520>.
- Zhang Q, Hu M, Wu H, et al. 2021d. Plasma polybrominated diphenyl ethers, urinary heavy metals and the risk of thyroid cancer: A case-control study in China. *Environ Pollut* 269:116162. <https://doi.org/10.1016/j.envpol.2020.116162>.
- Zhang W, Li F, Gao L, et al. 2022. Understanding the excretion rates of methylmercury and inorganic mercury from human body via hair and fingernails. *J Environ Sci (China)* 119:59-67. <https://doi.org/10.1016/j.jes.2022.01.041>.
- Zhang W, Cui Y, Liu J. 2023a. The association between blood heavy metals level and sex hormones among postmenopausal women in the US. *Front Endocrinol (Lausanne)* 14:1175011. <https://doi.org/10.3389/fendo.2023.1175011>.

8. REFERENCES

- Zhang X, Wei H, Guan Q, et al. 2023b. Maternal exposure to trace elements, toxic metals, and longitudinal changes in infancy anthropometry and growth trajectories: a prospective cohort study. *Environ Sci Technol* 57(32):11779-11791. <https://doi.org/10.1021/acs.est.3c02535>.
- Zhao Y, Zhou C, Wu C, et al. 2020. Subchronic oral mercury caused intestinal injury and changed gut microbiota in mice. *Sci Total Environ* 721:137639. <https://doi.org/10.1016/j.scitotenv.2020.137639>.
- Zhao Y, Zhou C, Guo X, et al. 2021. Exposed to mercury-induced oxidative stress, changes of intestinal microflora, and association between them in mice. *Biol Trace Elem Res* 199(5):1900-1907. <https://doi.org/10.1007/s12011-020-02300-x>.
- Zhao S, Yang X, Xu Q, et al. 2023. Association of maternal metals exposure, metabolites and birth outcomes in newborns: A prospective cohort study. *Environ Int* 179:108183. <https://doi.org/10.1016/j.envint.2023.108183>.
- Zheng Y, Lin PD, Williams PL, et al. 2021. Early pregnancy essential and non-essential metal mixtures and gestational glucose concentrations in the 2nd trimester: Results from project viva. *Environ Int* 155:106690. <https://doi.org/10.1016/j.envint.2021.106690>.
- Zheng L, Yu Y, Tian X, et al. 2023. The association between multi-heavy metals exposure and lung function in a typical rural population of Northwest China. *Environ Sci Pollut Res Int* 30(24):65646-65658. <https://doi.org/10.1007/s11356-023-26881-x>.
- Zhou CC, Fu H, Zhang GY, et al. 2021. Effects of low-level mercury exposure on brain-derived neurotrophic factor in preschool children. *Ecotoxicol Environ Saf* 208:111642. <https://doi.org/10.1016/j.ecoenv.2020.111642>.
- Zhou X, Feng Y, Gong Z. 2022. Associations between lead, cadmium, mercury, and arsenic exposure and alanine aminotransferase elevation in the general adult population: an exposure-response analysis. *Environ Sci Pollut Res Int* 29(35):53633-53641. <https://doi.org/10.1007/s11356-022-19698-7>.
- Zhu X, Kusaka Y, Sato K, et al. 2000. The endocrine disruptive effects of mercury. *Environ Health Prev Med* 4(4):174-183. <https://doi.org/10.1007/bf02931255>.
- Zhu XJ, Wang JJ, Mao JH, et al. 2019. Relationships of cadmium, lead, and mercury levels with albuminuria in US adults: Results from the National Health and Nutrition Examination Survey database, 2009-2012. *Am J Epidemiol* 188(7):1281-1287. <https://doi.org/10.1093/aje/kwz070>.
- Zhu F, Chen C, Zhang Y, et al. 2020. Elevated blood mercury level has a non-linear association with infertility in U.S. women: Data from the NHANES 2013-2016. *Reprod Toxicol* 91:53-58. <https://doi.org/10.1016/j.reprotox.2019.11.005>.
- Zorn NE, Smith JT. 1989. In vivo methylation of inorganic mercury in guinea pigs. *Biochem Arch* 5:141-146.
- Zuk AM, Liberda EN, Tsuji LJS. 2021. Environmental contaminant body burdens and the relationship with blood pressure measures among indigenous adults. *Environ Epidemiol* 5(2):e137. <https://doi.org/10.1097/ee9.000000000000137>.
- Zwicker JD, Dutton DJ, Emery JC. 2014. Longitudinal analysis of the association between removal of dental amalgam, urine mercury and 14 self-reported health symptoms. *Environ Health* 13:95. <https://doi.org/10.1186/1476-069x-13-95>.