Cadmium in the Maternal Diet - References

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Agency for Toxic Substances and Disease Registry (ATSDR), (2012). Toxicological Profile for Cadmium. Available at: Toxicological Profile for Cadmium (cdc.gov).

Al-Saleh, I., Shinwari, N., Mashhour, A., Mohamed, G.E.D., Rabah, A. (2011). Heavy Metals (Lead, Cadmium and Mercury) in Maternal, Cord Blood and Placenta of Healthy Women. International Journal of Hygiene and Environmental Health. **214**: 79-101. Available at: Heavy metals (lead, cadmium and mercury) in maternal, cord blood and placenta of healthy women - PubMed (nih.gov).

Banerjee, S., Suter, M.A., & Aagaard, K.M. (2020). Interactions Between Environmental Exposures and the Microbiome: Implications for Fetal Programming. Current Opinion in Endocrine and Metabolic Research. **13**: 39-48. Available at: Interactions between environmental exposures and the microbiome:

Implications for fetal programming - ScienceDirect.

Bates, B.; Lennox, A.; Prentice, A.; Bates, C.; Page, P.; Nicholson, S.; Swan, G. (2014) National Diet and Nutrition Survey Results from Years 1, 2, 3 and 4 (combined) of the Rolling Programme (2008/2009 – 2011/2012) Available at: Main heading (publishing.service.gov.uk).

Bates, B.; Cox, L.; Nicholson, S.; Page, P.; Prentice, A.; Steer, T.; Swan, G. (2016) National Diet and Nutrition Survey Results from Years 5 and 6 (combined) of the Rolling Programme (2012/2013 – 2013/2014) Available at: Main heading (publishing.service.gov.uk).

Bernard, A., & Lauwerys, R. (1986). Present Status and Trends in Biological Monitoring of Exposure to Industrial-Chemicals. Journal of Occupational and Environmental Medicine, **28(8)**: 558-562. Available at: Present status and trends in biological monitoring of exposure to industrial chemicals - PubMed (nih.gov).

Caserta, D., Graziano, A., Lo Monte, G., Bordi, G., Moscarini, M. (2013). Heavy Metals and Placental Fetal-Maternal Barrier: A Mini-Review on the Major Concerns. Eur Rev Med Pharmaco Sci. **17**: 2198-2206. Available at: Heavy metals and placental fetal-maternal barrier: a mini-review on the major concerns - PubMed (nih.gov).

Cerrillos, L., Fernádez, R., Machado, M.J., Morillas, I., Dahiri, B., Paz, S., Gonzalez-Weller, D., Gutiérrez, A., Rubio, C., Hardisson, A., Moreno, I., Fernández-Palaćin, A. (2019). Placental Levels of Metals and Associated Factors in Urban and Sub-Urban Areas of Seville (Spain). Journal of Trace Elements in Medicine and Biology.**54**: 21-26. Available at: Placental levels of metals and associated factors in urban and sub-urban areas of Seville (Spain) - PubMed (nih.gov).

Chao, H., Guo, C., Huang, C., Chen, P., Li, H., Hsiung, D., Chou, Y. (2014). Arsenic, Cadmium, Lead, and Aluminium Concentrations in Human Milk at Early Stages of Lactation. Pediatrics and Neonatology, **55**: 127-134. Available at: Arsenic, Cadmium, Lead, and Aluminium Concentrations in Human Milk at Early Stages of Lactation - ScienceDirect.

COT (Committee on Toxicity on Chemicals in Food, Consumer Products and the Environment) (2019). Potential toxicological risks from electronic nicotine (and non-nicotine) delivery systems (E(N)NDS – e-cigarettes). Paper 9: Bystander exposure. Available at: E(N)NDS paper4 aerosol toxicity (food.gov.uk).

COT (Committee on Toxicity on Chemicals in Food, Consumer Products and the Environment) (2018). Statement on Potential Risks from Cadmium in the Diet of Infants Aged 0 to 12 Months and Children Aged 1 to 5 Years. Available at: cotstatementoncadmium.pdf (food.gov.uk).

COT (Committee on Toxicity on Chemicals in Food, Consumer Products and the Environment) (2018). Potential toxicological risks from electronic nicotine (or non-nicotine) delivery systems (e-cigarettes). Paper 2: Exposure to metals present in the aerosol of electronic nicotine (or non-nicotine) delivery systems. Available at: tox2018-15.pdf (nationalarchives.gov.uk).

DEFRA (Department for Environment Food and Rural Affairs) (2012a). Technical Guidance Sheet on Normal Levels of Contaminants in English Soils: Cadmium. Technical Guidance Sheet No. TGS06. Available at: Science Search (defra.gov.uk).

DEFRA (Department for Environment for Food and Rural Affairs) (2013). Technical Guidance on Normal Levels of Contaminants in Welsh Soil: Cadmium. British Geological Survey (Keyworth, Nottingham) and DEFRA (London). R & D Project SP1008. Available at: Science Search (defra.gov.uk).

Dharmadasa, P., Kim, N., Thunders, M. (2017). Maternal Cadmium Exposure and Impact on Foetal Gene Expression Through Methylation Changes. Food and Chemical Toxicology, **109**: 714-720. Available at: Maternal cadmium exposure and impact on foetal gene expression through methylation changes - PubMed (nih.gov).

Ebrahim, K., & Ashtarinezhad, A. (2015). The Association of Amniotic Fluid Cadmium Levels with the Risk of Preeclampsia, Prematurity and Low Birth Weight. Iranian Journal of Neonatology. **6(2)**:1-6. Available at: [PDF] The Association of Amniotic Fluid Cadmium Levels with the Risk of Preeclampsia, Prematurity and Low Birth Weight | Semantic Scholar.

EC (European Commission) (2007). European Union Risk Assessment Report. Cadmium Metal and oxide. CAS No: 7440-43-9. EINECS No: 231-152-8. Available at: European Union Risk Assessment Report (europa.eu).

EFSA (2009). Cadmium in food. Scientific Opinion of the Panel on Contaminants in the Food Chain. The EFSA Journal **980**: 1-139. Available at: Cadmium in food - Scientific opinion of the Panel on Contaminants in the Food Chain - - 2009 - EFSA Journal - Wiley Online Library.

EFSA (2011a). Comparison of the Approaches Taken by EFSA and JECFA to Establish a HBGV for Cadmium. EFSA Journal, **9(2)**: 2006. Available at: Comparison of the Approaches Taken by EFSA and JECFA to Establish a HBGV for Cadmium | EFSA (europa.eu).

EFSA (2011b). Statement on Tolerable Weekly Intake for Cadmium. EFSA Panel on Contaminants in the Food Chain (CONTAM). EFSA Journal, **9(2)**: 1975. Available at : Statement on tolerable weekly intake for cadmium | EFSA (europa.eu).

Engström, A., Michaëlsson, K., Vahter, M., Julin, B., Wolk, A., Åkesson, A. (2012). Associations Between Dietary Cadmium Exposure and Bone Mineral Density and Risk of Osteoporosis and Fractures Among Women. Bone,**50**: 1372-1378. Available at: Associations between dietary cadmium exposure and bone mineral density and risk of osteoporosis and fractures among women - ScienceDirect.

Environment Agency (EA) (2009). Using Soil Guideline Values. Available at: Microsoft Word - 090323 SGV Introduction final.doc (publishing.service.gov.uk).

Espart, A., Artime, S., Tort-Nasarre, G., Yaya-Varòn, E. (2018). Cadmium Exposure During Pregnancy and Lactation: Materno-Fetal and Newborn Repercussions of Cd(II), and Cd-Metallothionein Complexes. Metallomics.**10**: 1359-1367. Available at: Cadmium exposure during pregnancy and lactation: materno-fetal and newborn repercussions of Cd(ii), and Cd–metallothionein complexes (rsc.org).

Everson, T.M., Kappil, M., Hao, K., Jackson, B.P., Punshon, T., Karagas, M.R., Chen, J., Marsit, C.J. (2017). Maternal Exposure to Selenium and Cadmium, Fetal Growth, and Placental Expression of Steroidogenic and Apoptotic Genes. Environmental Research. **158**: 233-244. Available at: Maternal exposure to selenium and cadmium, fetal growth, and placental expression of steroidogenic and apoptotic genes - PubMed (nih.gov).

Filippini, T., Torres, D., Lopes, C., Carvalho, C., Moreira, P., Naska, A., Kasdagli, M., Malavolti, M., Orsini, N., Vinceti, M. (2020). Cadmium Exposure and Risk of Breast Cancer: A Dose-Response Meta-Analysis of Cohort Studies. Environment International.**142**: 105879. Available at: Cadmium exposure and risk of breast cancer: A dose-response meta-analysis of cohort studies - PubMed (nih.gov).

Gao Y, Zhang Y, Yi J, Zhou J, Huang X, Shi X, Xiao S, Lin D. (2016). A Longitudinal Study on Urinary Cadmium and Renal Tubular Protein Excretion of Nickel–Cadmium Battery Workers After Cessation of Cadmium Exposure. International Archives of Occupational and Environmental Health. **89(7)**: 1137– 1145. Available at: A longitudinal study on urinary cadmium and renal tubular protein excretion of

nickel-cadmium battery workers after cessation of cadmium exposure - PubMed (nih.gov).

Geng, H., & Wang, L. (2019). Cadmium: Toxic Effects on Placental and Embryonic Development. Environmental Toxicology and Pharmacology. **67**: 102-107. Available at: Cadmium: Toxic effects on placental and embryonic development - ScienceDirect.

Grioni, S., Agnoli, C., Krogh, V., Pala, V., Rinaldi, S., Vinceti, M., Contiero, P., Vescovi, L., Malavolti, M., Sieri, S. (2019). Dietary Cadmium and Risk of Breast Cancer Subtypes Defined by Hormone Receptor Status: A Prospective Cohort Study. International Journal of Cancer. **144**: 2153-2160. Available at: Dietary cadmium and risk of breast cancer subtypes defined by hormone receptor status: A prospective cohort study - PubMed (nih.gov).

Gundacker, C., & Hengstschläger, M. (2012). The Role of the Placenta in Fetajkll Exposure to Heavy Metals. Wien Med Wochenschr. **162/9-10**: 201-206. Available at: The role of the placenta in fetal exposure to heavy metals - PubMed (nih.gov).

Guo, J., Wu, C., Qi, X., Jiang, S., Liu, Q., Zhang, J., Cao, Y., Chang, X., Zhou, Z. (2017). Adverse Associations Between Maternal and Neonatal Cadmium Exposure and Birth Outcomes. Science of the Total Environment, **575**: 581-587. Available at: Adverse associations between maternal and neonatal cadmium exposure and birth outcomes - ScienceDirect.

Gustin, K., Barman, M., Stråvik, M., Levi, M., Englund-Ögge, L., Murray, F., Jacobsson, B., Sandberg, A., Sandin, A., Wold, A.E., Vahter, M., Kippler, M. (2020). Low-Level Maternal Exposure to Cadmium, Lead and Mercury and Birth Outcomes in a Swedish Prospective Birth-Cohort. Environmental Pollution, **265**: 114986. Available at: Low-level maternal exposure to cadmium, lead, and mercury and birth outcomes in a Swedish prospective birth-cohort - PubMed (nih.gov).

Hartwig, A., Arand, M., Epe, B., Guth, S., Jahnke, G., Lampen, A., Martus, H., Monien, B., Rietjens, I.M.C.M., Schmitz-Spanke, S., Scriever-Schwemmer, G., Steinberg, P., Eisenbrand, G. (2020). Mode of action-based risk assessment of genotoxic carcinogens. Archives of Toxicology **94**:1787-1877. Available at: Mode of action-based risk assessment of genotoxic carcinogens (nih.gov).

Hinwood, A.L., Callan, A.C., Ramalingam, M., Boyce, M., Heyworth, J., McCafferty, P., Odland, J.Ø. (2013). Cadmium, Lead and Mercury Exposure in Non Smoking Pregnant Women. Environmental Research, **126**: 118-124. Available at: Cadmium, lead and mercury exposure in non smoking pregnant women -

ScienceDirect.

International Agency for Research on Cancer(IARC)(2012). Arsenic, Metals, Fibres, and Dusts Volume 100 C A Review of Human Carcinogens. IARC Monographs on the Evaluation of Carcinogenic Risks: 121-141. Available at: IARC Publications Website - Arsenic, Metals, Fibres, and Dusts .

International Programme on Chemical Safety (IPCS). 1992. Cadmium. Poisons Information Monograph. PIM 089. Available at : Cadmium (PIM 089) (inchem.org) .

Jacobo-Estrada, T., Santoyo-Sánchez, M., Thévenod, F., Barbier, O. (2017). Cadmium Handling, Toxicity and Molecular Targets Involved During Pregnancy: Lessons from Experimental Models. Int J Mol Sci. **18(7)**: 1590. Available at: Cadmium Handling, Toxicity and Molecular Targets Involved during Pregnancy: Lessons from Experimental Models - PubMed (nih.gov).

Jarup, L., Berglund, M., Elinder, C. G., Nordberg, G., Vahter, M. (1998). Health Effects of Cadmium Exposure – a review of the literature and a risk estimate. Scandinavian Journal of Work, Environment & Health, **Vol 24**, Supplement 1, pp 1-51. Available at: Health effects of cadmium exposure – a review of the literature and a risk estimate on JSTOR .

JECFA (Joint FAO/WHO Expert Committee on Food Additives) (2011). Evaluation of Certain Food Additives and Contaminants. WHO Technical Report Series, **960**. Available at: Evaluation of certain food additives and contaminants: seventy-third report of the Joint FAO/WHO Expert Committee on Food Additives.

JECFA (Joint FAO/WHO Expert Committee on Food Additives) (2021). An Overview of JECFA 91st Evaluation on Cadmium. Available at: PowerPoint Presentation (fao.org).

Julin, B., Wolk, A., Bergkvist, L., Bottai, M., Åkesson, A. (2012). Dietary Cadmium Exposure and Risk of Postmenopausal Breast Cancer: A Population-Based Prospective Cohort Study. Cancer Res. **72(6)**: 1459-66. Available at: Dietary cadmium exposure and risk of postmenopausal breast cancer: a population-based prospective cohort study - PubMed (nih.gov).

Kazantzis, G. (2004). Cadmium, Osteoporosis and Calcium Metabolism. Biomaterials, **17(5)**: 493-8. Available at: Cadmium, osteoporosis and calcium metabolism - PubMed (nih.gov).

Khan, M.A., Khan, S., Khan, A., Alam, M. (2017). Soil Contamination with Cadmium, Consequences and Remediation Using Organic Amendments. Science of The Total Environment **601-602**: 1591-1605. Available at: Soil contamination with cadmium, consequences and remediation using organic amendments - PubMed (nih.gov).

Kippler, M., Ekström, E., Lönnerdal, B., Goessler, W., Åkesson, A., El Arifeen, S., Persson, L., Vahter, M. (2007). Influence of Iron and Zinc Status on Cadmium Accumulation in Bangladeshi Women. Toxicology and Applied Pharmacology, **22(2)**: 221-226. Available at: Influence of iron and zinc status on cadmium accumulation in Bangladeshi women - ScienceDirect.

Kippler, M., Ekström, K., Mlakar, S.J., Bottai, M., Ahmend, S., Hossain, M.B., Raqib, R., Vahter, M., Broberg, K. (2013). Sex-Specific Effects of Early Life Cadmium Exposure on DNA Methylation and Implications for Birth Weight. Epigenetics, **8(5)** : 494-503. Available at: Sex-specific effects of early life cadmium exposure on DNA methylation and implications for birth we (tandfonline.com).

Kippler, M., Tofail, F., Gardner, R., Rahman, A., Hamadani, J.D., Bottai, M., Vahter, M. (2012). Maternal Cadmium Exposure During Pregnancy and Size at Birth: A Prospective Cohort Study. Environmental Health Perspectives, **120(2)**: 284-289. Available at: Maternal cadmium exposure during pregnancy and size at birth: a prospective cohort study - PubMed (nih.gov).

Kolonel, (1967). Association of Cadmium with Renal Cancer. Cancer, 37:1782-1787. Available at: Association of cadmium with renal cancer (wiley.com).

Kosanovic, M., Jokanovic, M., Jevremovic, M., Dobric, S., Bokonjic, D. (2002). Maternal and Fetal Cadmium and Selenium Status in Normotensive and Hypertensive Pregnancy. Biological Trace Element Research, **89**: 97-103. Available at: Maternal and fetal cadmium and selenium status in normotensive and hypertensive pregnancy - PubMed (nih.gov).

Krajnc, E.I., Van Gestel, C.A.M., Mulder, H.C.M. (1987). Integrated criteria document. Cadmium-Effects. Appendix. National Institute of Public Health and Environmental Protection, Bilthoven, Netherlands (Report no. 758476004).

Lane,W., & Morel, F.M. (2000). A Biological Function For Cadmium in Marine Diatoms. Proc. Nat. Acad. Sci. **97**: 4627-4631. Available at: A biological function for cadmium in marine diatoms - PMC (nih.gov).

Lauwerys, R., Amery, A., Bernard, A>, Bruaux, P., Buchet, J., Claeys, F., De Plaen, P., Ducoffre, G., Fagard, R., Lijnen, P., Nick, L., Roles, H., Rondia, D., Saint-Remy, A., Sartor, F., Staessen, J. (1990). Health Effects of Environmental Exposure to Cadmium: Objectives, Design and Organization of the Cadmibel Study: A Cross-Sectional Morbidity Study Carried Out in Belgium from 1985 to 1989. Environmental Health Perspectives, **87**: 283-289. Available at: A biological function for cadmium in marine diatoms - PMC (nih.gov).

Liu,T., Zhang, M., Guallar, E., Wang, G., Hong, X., Wang, X., Mueller, N.T. (2019). Trace Minerals, Heavy Metals, and Preeclampsia: Findings from the Boston Birth Cohort. Journal of the American Heart Association, **20;8(16)**. Available at: Trace Minerals, Heavy Metals, and Preeclampsia: Findings from the Boston Birth Cohort - PubMed (nih.gov).

Menai, M., Heude, B., Slama, R., Forhan, A., Sahuquillo, J., Charles, M., Yazbeck, C. (2012). Association Between Maternal Blood Cadmium During Pregnancy and Birth Weight and the Risk of Fetal Growth Restriction: The EDEN Mother-Child Cohort Study. Reproductive Toxicology, **34**: 622-627. Available at: Association between maternal blood cadmium during pregnancy and birth weight and the risk of fetal growth restriction: the EDEN mother-child cohort study - PubMed (nih.gov) .

Nair, A.R., DeGheselle, O., Smeets, K., Van Kerkhove, E., Cuypers, A. (2013). Cadmium-Induced Pathologies: Where Is the Oxidative Balance Lost (or Not)? Int. J. Mol. Sci.**14**: 6116-6143. Available at: Cadmium-Induced Pathologies: Where Is the Oxidative Balance Lost (or Not)? - PubMed (nih.gov).

Nawrot, T.S., Martens, D.S., Hara, A., Plusquin, M., Vangronsveld, J., Roles, H.A., Staessen, J.A. (2015). Association of Total Cancer and Lung Cancer with Environmental Exposure to Cadmium: The Meta-Analytical Evidence. Cancer Causes & Control, **26**: 1281-1288. Available at: Association of total cancer and lung cancer with environmental exposure to cadmium: the meta-analytical evidence - PubMed (nih.gov).

NHS (2020) Have a healthy diet in pregnancy. Available at: Have a healthy diet in pregnancy - NHS (www.nhs.uk).

Nordberg, G.F., Bernard, A., Diamond, G.L., Duffus, J.H., Illing, P., Nordberg, M., Bergdahl, I.A., Jin, T., Skerfving, S. (2018). Risk Assessment of Effects of Cadmium on Humand Health (IUPAC Technical Report). Pure and Applied Chemistry, **90(4)**: 755-808. Available at: Risk assessment of effects of cadmium on human health

(IUPAC Technical Report) (degruyter.com).

Osman, K., Åkesson, A., Berglund, M., Bremme, K., Schütz, A., Ask, K., Vahter, M. (2000). Toxic and Essential Elements in Placentas of Swedish Women. Clinical Biochemistry. **33(2)**: 131-138. Available at: Toxic and essential elements in placentas of swedish women - ScienceDirect.

Osorio-Yañez, C., Gelaye, B., Miller, R.S., Enquobahrie, D.A., Baccarelli, A.A., Qiu, C., Williams, M.A. (2016). Associations of Maternal Urinary Cadmium with Trimester-Specific Blood Pressure in Pregnancy: Role of Dietary Intake of Micronutrients. Biol Trace Elem Res. **174(1)**: 71-81. Available at: Associations of Maternal Urinary Cadmium with Trimester-Specific Blood Pressure in Pregnancy: Role of Dietary Intake of Micronutrients - PMC (nih.gov).

Pohanish, R.P. 2017. Sittig's Handbook of Toxic and Hazardous Chemicals and Carcinogens, Seventh Edition. William Andrew, Oxford, Oxfordshire, UK.

Rawlins, B.G., McGrath, S.P., Scheib, A.J., Breward, N., Cave, M., Lister, T.R., Ingham, M., Gowing, C., Carter, S. (2012). The Advanced Soil Geochemical Atlas of England and Wales. Available at: Advanced_Soil_Geochemical_Atlas_of_England_and_Wales.pdf (nerc.ac.uk).

Reeves, P.G., & Chaney, R.L. (2008). Bioavailability as an Issue in Risk Assessment and Management of Food Cadmium: A Review. Science of the Total Environment. 398: 13-19. Available at: Bioavailability as an issue in risk assessment and management of food cadmium: A review - ScienceDirect.

Roberts, C.; Steer, T.; Maplethorpe, N.; Cox, L.; Meadows, S.; Page, P.; Nicholson, S.; Swan, G. (2018) National Diet and Nutrition Survey Results from Years 7 and 8 (combined) of the Rolling Programme (2014/2015 – 2015/2016) Available at: National Diet and Nutrition Survey (publishing.service.gov.uk).

Roels, H., Hubermont, G., Buchet, J.P., Lauwerys, R. (1978). Placental Transfer of Lead, Mercury, Cadmium, and Carbon Monoxide. Environmental Research. **16**: 236-247. Available at: Placental transfer of lead, mercury, cadmium, and carbon monoxide in women. III. Factors influencing the accumulation of heavy metals in the placenta and the relationship between metal concentration in the placenta and in maternal and cord blood - PubMed (nih.gov).

Romano, M.E., Enquobahrie, D.A., Simpson, C., Checkoway, H., Williams, M.A. (2016). Maternal Body Burden of Cadmium and Offspring Size at Birth. Environmental Research. **147**: 461-468. Available at: Maternal body burden of

cadmium and offspring size at birth - ScienceDirect.

SACN (2011) The influence of maternal, fetal and child nutrition on the development of chronic disease later in life. Available at: SACN_Early_Life_Nutrition_Report.pdf (publishing.service.gov.uk).

SACN (2018) Feeding in the first year of life. Available at: SACN_report_on_Feeding_in_the_First_Year_of_Life.pdf (publishing.service.gov.uk).

Satarug, S., Vesey, D.A., Gobe, G.C. (2017). Current Health Risk Assessment Practice for Dietary Cadmium: Data from Different Countries. Food and Chemical Toxicology, **106**: 430-445. Available at: Current health risk assessment practice for dietary cadmium: Data from different countries - PubMed (nih.gov).

Scientific Committee on Occupational Exposure Limits (SCOEL). SCOEL/OPIN/336 Cadmium and its inorganic compounds. Available at: SCOEL/OPIN/336 cadmium and its inorganic compounds - Publications Office of the EU (europa.eu).

Shah-Kulkarni, S., Lee, S., Jeong, K.S., Hong, Y., Park, H., Ha, M., Kim, Y., Ha, E. (2020). Prenatal Exposure to Mixtures of Heavy Metals and Neurodevelopment in Infants at 6 Months. Environmental Research, **182**: 109122. Available at: Prenatal exposure to mixtures of heavy metals and neurodevelopment in infants at 6 months - ScienceDirect.

Simmons, R.W., Pongsakul, P., Saiyasitpanich, D., Klinphoklap, S. (2005). Elevated Levels of Cadmium and Zinc in Paddy Soils and Elevated Levels of Cadmium in Rice Grain Downstream of a Zinc Mineralized Area in Thailand: Implications for Public Health. Environ Geochem Health, **27 (5-6)**: 501-11. Available at: Elevated levels of cadmium and zinc in paddy soils and elevated levels of cadmium in rice grain downstream of a zinc mineralized area in Thailand: implications for public health - PubMed (nih.gov).

Srivastava, N., Spielman, S. J., Morrison, S. M., Moore, E. K. (2020). Geological Factors Impacted Cadmium Availability and Use as an Alternative Cofactor for Zinc in the Carbon Fixation Pathways of Marine Diatoms. School of Earth & Environment Faculty Scholarship. 47. Available at: Geological Factors Impacted Cadmium Availability and Use as an Alternative Cofactor for Zinc in the Carbon Fixation Pathways of Marine Diatoms. School of Earth & Environment Faculty Scholarship.

Stone, J., Sutrave, P., Gascoigne, E., Givens, M.B., Fry, R.C., Manuck, T.A. (2021). Exposure to Toxic Metals and Per- and Polyfluorolkyl Substances and the Risk of

Preeclampsia and Preterm Birth in the United States: A Review. Amer J Obstet Gynecol MFM, **3:** 100308. Available at: Exposure to toxic metals and per- and polyfluoroalkyl substances and the risk of preeclampsia and preterm birth in the United States: a review - PubMed (nih.gov).

Thevenod, F. (2009). Cadmium and Cellular Signaling Cascades: To Be or Not To Be? Toxicology and Applied Pharmacology, **238**: 221-239. Available at: Cadmium and cellular signaling cascades: to be or not to be? - PubMed (nih.gov).

Thirumoorthy, N., Sunder, A. S., Kumar, K.T.M., Kumar, M.S., Ganesh, G.N.K., and Chatterjee, M. (2011). A Review of Metallothionein Isoforms and their Role in Pathophysiology. World Journal of Surgical Oncology, **9:** 54. Available at: A Review of Metallothionein Isoforms and their Role in Pathophysiology - PMC (nih.gov).

Thompson, J. and Bannigan, J. (2008). Cadmium: Toxic effects on the reproductive system and the embryo. Reproductive Toxicology, **25:** 304-315. Available at: Cadmium: toxic effects on the reproductive system and the embryo - PubMed (nih.gov).

Tung, P.W., Burt, A., Karagas, M., Jackson, B.P., Punshon, T., Lester, B., Marsit, C.J. (2022). Association Between Placental Toxic Metal Exposure and NICU Network Neurobehavioral Scales (NNNS) Profiles in the Rhode Island Child Health Study (RICHS). Environmental Research, **204**: 111939. Available at: Association between placental toxic metal exposure and NICU Network Neurobehavioral Scales (NNNS) profiles in the Rhode Island Child Health Study (RICHS) - ScienceDirect.

Umemura, T., and Wako, Y. (2006). Pathogenesis of Osteomalacia in Itai-Itai Disease. J Toxicol Pathol: 69-74. Available at: en (jst.go.jp).

Unsal, V., Dalkiran, T., Çiçek, M., Kölükçü, E. (2020). The Role of Natural Antioxidants Against Reactive Oxygen Species Produced by Cadmium Toxicity: A Review. Adv Pharm Bull, **10(2)**: 184-202. Available at: The Role of Natural Antioxidants Against Reactive Oxygen Species Produced by Cadmium Toxicity: A Review (nih.gov).

Vahter, M., Åkesson, A., Lidén, C. (2002). Metals and Women’s Health. Environmental Research, **88(3)**: 145-155. Available at: Metals and women's health - PubMed (nih.gov).

WHO (2000). Chapter 6.3 Cadmium. Air Quality Guidelines – Second Edition. WHO Regional Office for Europe, Copenhagen, Denmark. Available at : Microsoft Word -

6.3-Cadmium.doc (who.int).

WHO (2011). Cadmium in Drinking Water. WHO/SDE/WSH/03.04/80/Rev/1. Available at: Microsoft Word - Fourth Edition Cadmium final 14 June 2011.doc (who.int).

WHO (2017). Guidelines for Drinking-Water Quality, 4th Edition, Incorporating the 1st Addendum. Available at: Guidelines for drinking-water quality, 4th edition, incorporating the 1st addendum (who.int).

Yang, H., & Shu, Y. (2015). Cadmium Transporters in the Kidney and Cadmium-Induced Nephrotoxicity. Int. J. Mol. Sci. **16**: 1484-1494. Available at: Microsoft Word - ijms-66989-for publish (nih.gov).

Yoshida M, Ohta H, Yamauchi Y, seki Y. (1993). Age dependent changes in metallothionein levels in liver and kidney of the Japanese. Biological Trace Element Research **63**: 167 – 175.

Zhang, M., Luo, J., Zhang, C., Cao, H., Xia, B., Hu, G. (2017). Alterations in Antioxidant Function and Cell Apoptosis in Duck Spleen Exposed to Molybdenum and/or Cadmium. J Vet Sci, **18(2)**: 193-200. Available at: Alterations in antioxidant function and cell apoptosis in duck spleen exposed to molybdenum and/or cadmium - PubMed (nih.gov).