PERFLUOROALKYLS 762

CHAPTER 8. REFERENCES

- +3M. 1983. Two year oral (diet) toxicity/carcinogenicity study of fluorochemical FC-143 in rats. Washington, DC: U.S. Environmental Protection Agency. Submitted to the U.S. Environmental Protection Agency under TSCA Section 8E. OTS0204926-1.
- 3M. 1999. The science of organic fluorochemistry. U.S. Environmental Protection Agency. OPPT-2002-0043-0006. http://www.fluoridealert.org/pesticides/pfos.fr.final.docket.0006.pdf. July 08, 2008.
- 3M. 2000. Sulfonated perfluorochemicals in the environment: Sources; dispersion, fate and effects. 3M Company submission to the U.S. Environmental Protection Agency's Administrative Record. OPPT-2002-0043-0005.
- +3M. 2001. A 28-day oral (gavage) toxicity study of T-7485 in Sprague-Dawley rats. St Paul, MN: 3M Corporate Toxicology.
- +3M. 2007a. A 5-day repeat dose oral toxicity screening study in rats with a 7-day recovery period with MTDID. St. Paul, MN: 3M Corporate Toxicology.
- 3M. 2007b. Remedial investigation report. Phase 2. Fluorochemical (FC) data assessment report for the Cottage Grove, MN site. St. Paul, MN: 3M Corporate Toxicology.
- 3M. 2008a. Information about PFOS and PFOA. 3M Company. http://solutions.3m.com/wps/portal/3M/en_US/PFOS/PFOA/. April 01, 2008.
- 3M. 2008b. Data assessment report. 3M Decatur, Alabama facility PFOA site-related environmental monitoring program. St. Paul, MN: 3M Company.
- 3M. 2008c. Screening level human exposure assessment report. 3M Decatur, Alabama facility PFOA site-related environmental monitoring program. St. Paul, MN: 3M Company.
- 3M. 2010. GLP10-01-01, Interim report 10: Analysis of PFBS, PFHS, and PFOS in groundwater samples collected at off-site wells located in Decatur, AL in October 2010. In: Docket EPA-HQ-2004-0112-0155. Letter to USEPA, Docket Center, from Gary A. Hohenstein, Manager of Environmental and Regulatory Affairs, 3M Company. 3M. https://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OPPT-2004-0112-0155&attachmentNumber=9&contentType=pdf February 28, 2017.
- 3M. 2012. E12-0849 Revised final report- Decatur soils- December 2012. https://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OPPT-2004-0112-0155&attachmentNumber=36&contentType=pdf February 28, 2017.
- Abbott BD. 2009. Review of the expression of peroxisome proliferator-activated receptors alpha (PPARα), beta (PPARβa), and gamma (PPARγ) in rodent and human development. Reprod Toxicol 27(3-4, Sp. Iss. SI):246-257. 10.1016/j.reprotox.2008.10.001.
- +Abbott BD, Wolf CJ, Das KP, et al. 2009. Developmental toxicity of perfluorooctane sulfonate (PFOS) is not dependent on expression of peroxisome proliferator activated receptor-alpha (PPARα) in the mouse. Reprod Toxicol 27(3-4):258-265.
- +Abbott BD, Wolf CJ, Schmid JE, et al. 2007. Perfluorooctanoic acid (PFOA)-induced developmental toxicity in the mouse is dependent on expression of peroxisome proliferator activated receptor-alpha. Toxicol Sci 98(2):571-581.
- Abbott BD, Wood CR, Watkins AM, et al. 2010. Peroxisome proliferator-activated receptors alpha, beta, and gamma mRNA and protein expression in human fetal tissues. PPAR Res 10.1155/2010/690907.
- Abbott BD, Wood CR, Watkins AM, et al. 2012. Effects of perfluorooctanoic acid (PFOA) on expression of peroxisome proliferator-activated receptors (PPAR) and nuclear receptor-regulated genes in fetal and postnatal CD-1 mouse tissues. Reprod Toxicol 33(4):491-505.

_

⁺ Cited in supplemental document

PERFLUOROALKYLS 763 8. REFERENCES

- Abdellatif A, Al-Tonsy AH, Awad ME, et al. 2004. Peroxisomal enzymes and δ-hydroxydeoxyguanosine in rat liver treated with perfluorooctanoic acid. Dis Markers 19(1):19-25.
- Abdellatif AG, Preat V, Taper HS, et al. 1991. The modulation of rat liver carcinogenesis by perfluorooctanoic acid, a peroxisome proliferator. Toxicol Appl Pharmacol 111:530-537.
- ACGIH. 2001. Ammonium perfluorooctanoate. In: Documentation of the threshold limit values and biological exposure indices. Cincinnati, OH: American Conference of Governmental Industrial Hygienists, 1-3.
- Ahmed DY, Abd Ellah MR. 2012. Effect of exposure to perfluorooctanoic acid on hepatic antioxidants in mice. Comp Clin Pathol 21(6):1643-1645.
- +Albrecht PP, Torsell NE, Krishnan P, et al. 2013. A species difference in the peroxisome proliferatoractivated receptor α-dependent response to the developmental effects of perfluorooctanoic acid. Toxicol Sci 131(2):568-582.
- Alexander BH, Olsen GW. 2007. Bladder cancer in perfluorooctanesulfonyl fluoride manufacturing workers. Ann Epidemiol 17(6):471-478.
- Alexander BH, Olsen GW, Burris JM, et al. 2003. Mortality of employees of a perfluorooctanesulphonyl fluoride manufacturing facility. Occup Environ Med 60:722-729.
- Alkhalawi E, Kasper-Sonnenberg M, Wilhelm M, et al. 2016. Perfluoroalkyl acids (PFAAs) and anthropometric measures in the first year of life: Results from the Duisburg Birth Cohort. J Toxicol Environ Health A 79(22-23):1041-1049. http://doi.org/10.1080/15287394.2016.1219552.
- Allen BC, Covington TR, Clewell HJ. 1996. Investigation of the impact of pharmacokinetic variability and uncertainty on risks predicted with a pharmacokinetic model for chloroform. Toxicology 111(1-3):289-303.
- Al-sheyab NA, Al-Qudah KM, Tahboub VR. 2015. Levels of perfluorinated compounds in human breast milk in Jordan: The impact of sociodemographic characteristics. Environ Sci Pollut Res Int 22:12415-12423.
- Alves A, Jacobs G, Vanermen G, et al. 2015. New approach for assessing human perfluoroalkyl exposure via hair. Talanta 144:574-583. 10.1016/j.talanta.2015.07.009.
- AMAP. 2017. AMAP assessment 2016: Chemicals of emerging arctic concern. Oslo, Norway: Arctic Monitoring and Assessment Programme (AMAP). https://www.amap.no/documents/doc/AMAP-Assessment-2016-Chemicals-of-Emerging-Arctic-Concern/1624.
- Andersen CS, Fei C, Gamborg M, et al. 2010. Prenatal exposures to perfluorinated chemicals and anthropometric measures in infancy. Am J Epidemiol 172(11):1230-1237.
- Andersen CS, Fei C, Gamborg M, et al. 2013. Prenatal exposures to perfluorinated chemicals and anthropometry at 7 years of age. Am J Epidemiol 178(6):921-927.
- Andersen ME, Butenhoff JL, Chang SC, et al. 2008. Perfluoroalkyl acids and related chemistries-toxicokinetics and modes of action. Toxicol Sci 102(1):3-14.
- Andersen ME, Clewell HJ, Tan YM, et al. 2006. Pharmacokinetic modeling of saturable, renal resorption of perfluoroalkylacids in monkeys probing the determinants of long plasma half-lives. Toxicology 227(1-2):156-164.
- Anderson RH, Long GC, Porter RC, et al. 2016. Occurrence of select perfluoroalkyl substances at U.S. Air Force aqueous film-forming foam release sites other than fire-training areas: Field-validation of critical fate and transport properties. Chemosphere 150:678-685. 10.1016/j.chemosphere.2016.01.014.
- Anderson-Mahoney P, Kotlerman J, Takhar H, et al. 2008. Self-reported health effects among community residents exposed to perfluorooctanoate. New Solut 18(2):129-143.
- Antignac JP, Veyrand B, Kadar H, et al. 2013. Occurrence of perfluorinated alkylated substances in breast milk of French women and relation with socio-demographical and clinical parameters: Results of the ELFE pilot study. Chemosphere 91:802-808.
- Apelberg BJ, Goldman LR, Calafat AM, et al. 2007a. Determinants of fetal exposure to polyfluoroalkyl compounds in Baltimore, Maryland. Environ Sci Technol 41:3891-3897.

PERFLUOROALKYLS 764 8. REFERENCES

- Apelberg FJ, Witter FR, Herbstman JB, et al. 2007b. Cord serum concentrations of perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) in relation to weight and size at birth. Environ Health Perspect 115:1670-1676.
- Armitage J, Cousins I, Buck RC, et al. 2006. Modeling global-scale fate and transport of perfluorooctanoate emitted from direct sources. Environ Sci Technol 40:6969-6975.
- Ashley-Martin J, Dodds L, Arbuckle TE, et al. 2016. Maternal and neonatal levels of perfluoroalkyl substances in relation to gestational weight gain. Int J Environ Res Public Health 13(1):146. 10.3390/ijerph13010146.
- Ashley-Martin J, Dodds L, Arbuckle TE, et al. 2017. Maternal concentrations of perfluoroalkyl substances and fetal markers of metabolic function and birth weight. Am J Epidemiol 185(3):185-193. http://doi.org/10.1093/aje/kww213.
- Ashley-Martin J, Dodds L, Levy AR. 2015. Prenatal exposure to phthalates, bisphenol A and perfluoroalkyl substances and cord blood levels of IgE, TSLP and IL-33. Environ Res 140:360-368.
- ATSDR. 1989. Decision guide for identifying substance-specific data needs related to toxicological profiles; Notice. Agency for Toxic Substances and Disease Registry, Division of Toxicology. Fed Regist 54(174):37618-37634.
- ATSDR. 2003. Guidance for the preparation of toxicological profiles. Agency for Toxic Substances and Disease Registry. https://www.atsdr.cdc.gov/toxprofiles/index.asp#profiledevelopment. July 6, 2017.
- ATSDR. 2005. Health consultation. 3M chemolite. Perfluorochemical releases at the 3M-Cottage Grove facility. Atlanta, GA: Agency for Toxic Substances and Disease Registry. http://www.atsdr.cdc.gov/HAC/pha/3M-CGF021805-MN/3M-CGF021805-MN_pt1.pdf. June 27, 2008.
- ATSDR. 2008. Public health Assessment for perfluorochemical contamination in Lake Elmo and Oakdale, Washington County, Minnesota. EPA facility ID: MND980704738 and MND980609515 August 29, 2008. Agency for Toxic Substances and Disease Registry. http://www.health.state.mn.us/divs/eh/hazardous/sites/washington/lakeelmo/phaelmooakdale.pdf. November 13, 2008.
- ATSDR. 2013. Health consultation. Exposure investigation report. Perfluorochemical serum sampling in the vicinity of Decatur, Alabama, Morgan, Lawrence, and Limestone counties. Atlanta, GA: Agency for Toxic Substances and Disease Registry, U.S. Department of Health and Human Services.
- ATSDR. 2017. Perfluoroalkyls. Full SPL data. Substance priority list (SPL) resource page. Agency for Toxic Substances and Disease Registry, Centers for Disease Control and Prevention. http://www.atsdr.cdc.gov/SPL/resources/index.html. October 6, 2017.
- ATSDR. 2018. Per- and polyfluoroalkyl substances (PFAS) and your health: How is ATSDR involved investigating PFAS in the environment? Agency for Toxic Substances and Disease Registry. https://www.atsdr.cdc.gov/pfas/atsdr_sites_involvement.html. August 8, 2019.
- Bach CC, Bech BH, Nohr EA, et al. 2016. Perfluoroalkyl acids in maternal serum and indices of fetal growth: The Aarhus Birth Cohort. Environ Health Perspect 10.1289/ehp.1510046.
- Bach CC, Bech BH, Nohr EA, et al. 2015a. Serum perfluoroalkyl acids and time to pregnancy in nulliparous women. Environ Res 142:535-541. 10.1016/j.envres.2015.08.007.
- Bach CC, Henriksen TB, Bossi R, et al. 2015b. Perfluoroalkyl acid concentrations in blood samples subjected to transportation and processing delay. PLoS ONE 10(9):e0137768.
- Bach CC, Liew Z, Bech BH, et al. 2015c. Perfluoroalkyl acids and time to pregnancy revisited: An update from the Danish National Birth Cohort. Environ Health 14:59. 10.1186/s12940-015-0040-9.
- Bach CC, Liew Z, Bech BH, et al. 2015d. Additional file to perfluoroalkyl acids and time to pregnancy revisited: An update from the Danish National Birth Cohort [Environ Health 14:59]. Environ Health 10.1186/s12940-015-0040-9.

PERFLUOROALKYLS 765 8. REFERENCES

- Baduel C, Paxman CJ, Mueller JF. 2015. Perfluoroalkyl substances in a firefighting training ground (FTG), distribution and potential future release. J Hazard Mater 296:46-53. http://doi.org/10.1016/j.jhazmat.2015.03.007.
- Bae J, Kim S, Schisterman EF, et al. 2015. Maternal and paternal serum concentrations of perfluoroalkyl and polyfluoroalkyl substances and the secondary sex ratio. Chemosphere 133:31-40. 10.1016/j.chemosphere.2015.03.015.
- Bao WW, Qian ZM, Geiger SD, et al. 2017. Gender-specific associations between serum isomers of perfluoroalkyl substances and blood pressure among Chinese: Isomers of C8 Health Project in China. Sci Total Environ 607-608:1304-1312. http://doi.org/10.1016/j.scitotenv.2017.07.124.
- Barbarossa A, Masetti R, Gazzotti T, et al. 2013. Perfluoroalkyl substances in human milk: A first survey in Italy. Environ Int 51:27-30.
- Barber JL, Berger U, Chaemfa C, et al. 2007. Analysis of per- and polyfluorinated alkyl substances in air samples from Northwest Europe. J Environ Monit 9:530-541.
- Barnes DG, Dourson M. 1988. Reference dose (RfD): Description and use in health risk assessments. Regul Toxicol Pharmacol 8(4):471-486.
- Barrett ES, Chen C, Thurston SW, et al. 2015. Perfluoroalkyl substances and ovarian hormone concentrations in naturally cycling women. Fertil Steril 103(5):1261-1270 e1263. 10.1016/j.fertnstert.2015.02.001.
- Barry V, Darrow LA, Klein M, et al. 2014. Early life perfluorooctanoic acid (PFOA) exposure and overweight and obesity risk in adulthood in a community with elevated exposure. Environ Res 132:62-69.
- Barry V, Winquist A, Steenland K. 2013. Perfluorooctanoic acid (PFOA) exposures and incident cancers among adults living near a chemical plant. Environ Health Perspect 121(11-12):1313-1318.
- Bartell SM, Calafat AM, Lyu C, et al. 2010. Rate of decline in serum PFOA concentrations after granular activated carbon filtration at two public water systems in Ohio and West Virginia. Environ Health Perspect 118(2):222-228.
- Barton CA, Butler LE, Zarzecki CJ, et al. 2006. Characterizing perfluorooctanoate in ambient air near the fence line of a manufacturing facility: Comparing modeled and monitored values. J Air Waste Manag Assoc 56:48-55.
- Barton CA, Kaiser MA, Russell MH. 2007. Partitioning and removal of perfluorooctanoate during rain events: The importance of physical-chemical properties. J Environ Monit 9:839-846.
- Beesoon S, Martin JW. 2015. Isomer-specific binding affinity of perfluorooctanesulfonate (PFOS) and perfluorooctanoate (PFOA) to serum proteins. Environ Sci Technol 49(9):5722-5731.
- Begley TH, White K, Honigfort P, et al. 2005. Perfluorochemicals: Potential sources of and migration from food packaging. Food Addit Contam 22(10):1023-1031.
- Benninghoff AD, Bisson WH, Koch DC, et al. 2011. Estrogen-like activity of perfluoroalkyl acids *in vivo* and interaction with human and rainbow trout estrogen receptors *in vitro*. Toxicol Sci 120(1):42-58.
- Benninghoff AD, Orner GA, Buchner CH, et al. 2012. Promotion of hepatocarcinogenesis by perfluoroalkyl acids in rainbow trout. Toxicol Sci 125(1):69-78. 10.1093/toxsci/kfr267.
- Benskin JP, De Silva AO, Martin LJ, et al. 2009. Disposition of perfluorinated acid isomers in Sprague-Dawley rats: Part 1: Single dose. Environ Toxicol Chem 28(3):542-554.
- Berg V, Nost TH, Hansen S, et al. 2015. Assessing the relationship between perfluoroalkyl substances, thyroid hormones and binding proteins in pregnant women; a longitudinal mixed effects approach. Environ Int 77:63-69. 10.1016/j.envint.2015.01.007.
- Berg V, Nost TH, Pettersen RD, et al. 2017. Persistent organic pollutants and the association with maternal and infant thyroid homeostasis: A multipollutant assessment. Environ Health Perspect 125(1):127-133. http://doi.org/10.1289/ehp152.
- Bhhatarai B, Gramatica P. 2011. Prediction of aqueous solubility, vapor pressure and critical micelle concentration for aquatic partitioning of perfluorinated chemicals. Environ Sci Technol 45(19):8120-8128. http://doi.org/10.1021/es101181g.

PERFLUOROALKYLS 766 8. REFERENCES

- +Biegel LB, Hurtt ME, Frame SR, et al. 2001. Mechanisms of extrahepatic tumor induction by peroxisome proliferators in male CD rats. Toxicol Sci 60(1):44-55.
- +Biegel LB, Liu RC, Hurtt ME, et al. 1995. Effects of ammonium perfluorooctanoate on Leydig cell function: *In vitro*, *in vivo*, and *ex vivo* studies. Toxicol Appl Pharmacol 134(1):18-25.
- +Bijland S, Rensen PC, Pieterman EJ, et al. 2011. Perfluoroalkyl sulfonates cause alkyl chain length-dependent hepatic steatosis and hypolipidemia mainly by impairing lipoprotein production in APOE*3-Leiden CETP mice. Toxicol Sci 123(1):290-303. 10.1093/toxsci/kfr142.
- Bilott RA. 2004. PFOA-exposed community blood sample results (for AR-226 and OPPT-2003-0012). Submitted to the U.S. Environmental Protection Agency under TSCA Section FYI. http://www.epa.gov/oppt/tsca8e/pubs/8ehq/2004/oct04/fyi_1004_01480a.pdf. May 5, 2014.
- Bilott RA. 2005a. Perfluorochemical residential exposure data for Washington County, Minnesota. Submitted to the U.S. Environmental Protection Agency.
- Bilott RA. 2005b. Perfluorochemical residential exposure data for Washington County, Minnesota. Submitted to the U.S. Environmental Protection Agency. http://yosemite.epa.gov/sab/sabproduct.nsf/1BF9ABCD791BDDE38525711F000156BE/\$File/pfoa_sab_lett-bilott_05-20-05.pdf. May 5, 2014.
- Bilott RA. 2007. Perfluorochemical residential exposure data for Washington County, Minnesota. EPA-HQ-OPPT-2003-0012-1230. https://www.regulations.gov/document?D=EPA-HQ-OPPT-2003-0012-1230. February 28, 2017.
- Bischel HN, MacManus-Spencer LA, Zhang C, et al. 2011. Strong associations of short-chain perfluoroalkyl acids with serum albumin and investigation of binding mechanisms. Environ Toxicol Chem 30(11):2423-2430.
- Bjermo H, Darnerud PO, Pearson M, et al. 2013. Serum concentrations of perfluorinated alkyl acids and their associations with diet and personal characteristics among Swedish adults. Mol Nutr Food Res 57(12):2206-2215.
- Bjerregaard-Olesen C, Bach CC, Long M, et al. 2016. Time trends of perfluorinated alkyl acids in serum from Danish pregnant women 2008-2013. Environ Int 91:14-21. 10.1016/j.envint.2016.02.010.
- Bjork JA, Wallace KB. 2009. Structure-activity relationships and human relevance for perfluoroalkyl acid-induced transcriptional activation of peroxisome proliferation in liver cell cultures. Toxicol Sci 111(1):89-99.
- Bjork JA, Butenhoff JL, Wallace KB. 2011. Multiplicity of nuclear receptor activation by PFOA and PFOS in primary human and rodent hepatocytes. Toxicology 288(1-3):8-17. 10.1016/j.tox.2011.06.012.
- Björklund JA, Thuresson K, de Wit CA. 2009. Perfluoroalkyl compounds (PFCs) in indoor dust: Concentrations, human exposure estimates, and sources. Environ Sci Technol 43(7):2276-2281.
- Blaine AC, Rich CD, Hundal LS, et al. 2013. Uptake of perfluoroalkyl acids into edible crops via land applied biosolids: Field and greenhouse studies. Environ Sci Technol 47:14062-14069.
- Blaine AC, Rich CD, Sedlacko EM, et al. 2014a. Perfluoroalkyl acid distribution in various plant compartments of edible crops grown in biosolids-amended soils. Environ Sci Technol 48(14):7858-7865. 10.1021/es500016s.
- Blaine AC, Rich CD, Sedlacko EM, et al. 2014b. Perfluoroalkyl acid uptake in lettuce (Lactuca sativa) and strawberry (Fragaria ananassa) irrigated with reclaimed water. Environ Sci Technol 48:14361-14368.
- Bloom MS, Kannan K, Spliethoff HM, et al. 2010. Exploratory assessment of perfluorinated compounds and human thyroid function. Physiol Behav 99(2):240-245.
- Bogdanska J, Borg D, Sundstrom M, et al. 2011. Tissue distribution of ³⁵S-labelled perfluorooctane sulfonate in adult mice after oral exposure to a low environmentally relevant dose or a high experimental dose. Toxicology 284(1-3):54-62.
- Bogdanska J, Sundstrom M, Bergstrom U, et al. 2014. Tissue distribution of 35S-labelled perfluorobutanesulfonic acid in adult mice following dietary exposure for 1-5 days. Chemosphere 98:28-36.

PERFLUOROALKYLS 767 8. REFERENCES

- Boiteux V, Dauchy X, Rosin C, et al. 2012. National screening study on 10 perfluorinated compounds in raw and treated tap water in France. Arch Environ Contam Toxicol 63(1):1-12. 10.1007/s00244-012-9754-7.
- Bonefeld-Jorgensen EC, Long M, Bossi R, et al. 2011. Perfluorinated compounds are related to breast cancer risk in Greenlandic Inuit: A case control study. Environ Health 10:88. 10.1186/1476-069X-10-88
- Bonefeld-Jorgensen EC, Long M, Fredslund SO, et al. 2014. Breast cancer risk after exposure to perfluorinated compounds in Danish women: A case-control study nested in the Danish National Birth Cohort. Cancer Causes Control 25(11):1439-1448. 10.1007/s10552-014-0446-7.
- Borg D, Bogdanska J, Sundstrom M, et al. 2010. Tissue distribution of ³⁵S-labelled perfluorooctane sulfonate (PFOS) in C57Bl/6 mice following late gestational exposure. Reprod Toxicol 30(4):558-565.
- Bossi R, Riget FF, Dietz R. 2005. Temporal and spatial trends of perfluorinated compounds in ringed seal (*Phoca hispida*) from Greenland. Environ Sci Technol 39:7416-7422.
- Boulanger B, Peck AM, Schnoor JL, et al. 2005. Mass budget of perfluorooctane surfactants in Lake Ontario. Environ Sci Technol 39:74-79.
- Boulanger B, Vargo J, Schnoor JL, et al. 2004. Detection of perfluorooctane surfactants in Great Lakes water. Environ Sci Technol 38:4064-4070.
- Brantsaeter AL, Whitworth KW, Ydersbond TA, et al. 2013. Determinants of plasma concentration of perfluoroalkyl substances in pregnant Norwegian women. Environ Int 54:74-84.
- Braun JM, Chen A, Romano ME, et al. 2016a. Prenatal perfluoroalkyl substance exposure and child adiposity at 8 years of age: The HOME study. Obesity (Silver Spring, Md.) 24(1):231-237. 10.1002/oby.21258.
- Braun JM, Chen A, Romano ME, et al. 2016b. Supplemental material for: Prenatal perfluoroalkyl substance exposure and child adiposity at 8 years of age: The HOME study. [Obesity 24(1):231-237]. Obesity (Silver Spring, Md.) 24(1):231-237. http://onlinelibrary.wiley.com/store/10.1002/oby.21258/asset/supinfo/oby21258-sup-0001-suppinfo01.docx?v=1&s=cac722d8275d428f198a62d78041881f25813e38.
- Braun JM, Kalkbrenner AE, Just AC, et al. 2014. Gestational exposure to endocrine-disrupting chemicals and reciprocal social, repetitive, and stereotypic behaviors in 4- and 5-year-old children: The HOME study. Environ Health Perspect 122(5):513-520. 10.1289/ehp.1307261.
- +Brewster DW, Birnbaum LS. 1989. The biochemical toxicity of perfluorodecanoic acid in the mouse is different from that of 2,3,7,8-tetrachlorodibenzo-p-dioxin. Toxicol Appl Pharmacol 99:544-554.
- Brochot C, Smith TJ, Bois FY. 2007. Development of a physiologically based toxicokinetic model for butadiene and four major metabolites in humans: Global sensitivity analysis for experimental design issues. Chem Biol Interact 167(3):168-183. 10.1016/j.cbi.2007.02.010.
- Brown TM, Macdonald RW, Muir DC, et al. 2018. The distribution and trends of persistent organic pollutants and mercury in marine mammals from Canada's Eastern Arctic. Sci Total Environ 618:500-517.
- Buck RC, Franklin J, Berger U, et al. 2011. Perfluoroalkyl and polyfluoroalkyl substances in the environment: Terminology, classification, and origins. Integr Environ Assess Manag 7(4):513-541.
- Buck Louis GM, Chen Z, Schisterman EF, et al. 2015. Perfluorochemicals and human semen quality: The LIFE study. Environ Health Perspect 123(1):57-63. 10.1289/ehp.1307621.
- Buck Louis GM, Peterson CM, Chen Z, et al. 2012. Perfluorochemicals and endometriosis. The ENDO study. Epidemiology 23(6):799-805.
- Buck Louis GM, Sapra KJ, Barr DB, et al. 2016. Preconception perfluoroalkyl and polyfluoroalkyl substances and incident pregnancy loss, LIFE Study. Reprod Toxicol 65:11-17. http://doi.org/10.1016/j.reprotox.2016.06.011.
- Buck Louis GM, Sundaram R, Schisterman EF, et al. 2013. Persistent environmental pollutants and couple fecundity: The LIFE Study. Environ Health Perspect 121:231-236.

PERFLUOROALKYLS 768 8. REFERENCES

- Buist SCN, Klaassen CD. 2004. Rat and mouse differences in gender-predominant expression of organic anion transporter (OAT1-3; SLC22A6-9) mRNA levels. Drug Metab Dispos 32(6):620-625.
- Burns DC, Ellis DA, Li H, et al. 2008. Experimental pK_a determination for perfluorooctanoic acid (PFOA) and the potential impact of pK_a concentration dependence on laboratory-measured phenomena and environmental modeling. Environ Sci Technol 42(24):9283-9288.
- Buser MC, Scinicariello F. 2016. Perfluoroalkyl substances and food allergies in adolescents. Environ Int 88:74-79. 10.1016/j.envint.2015.12.020.
- +Butenhoff JL, Bjork JA, Chang SC, et al. 2012a. Toxicological evaluation of ammonium perfluorobutyrate in rats: Twenty-eight-day and ninety-day oral gavage studies. Reprod Toxicol 33(4):513-530.
- +Butenhoff JL, Chang S, Ehresman DJ, et al. 2009a. Evaluation of potential reproductive and developmental toxicity of potassium perfluorohexanesulfonate in Sprague Dawley rats. Reprod Toxicol 27:331-341.
- +Butenhoff JL, Chang SC, Olsen GW, et al. 2012b. Chronic dietary toxicity and carcinogenicity study with potassium perfluorooctanesulfonate in Sprague Dawley rats. Toxicology 293(1-3):1-15.
- +Butenhoff J, Costa G, Elcombe C, et al. 2002. Toxicity of ammonium perfluorooctanoate in male Cynomolgus monkeys after oral dosing for 6 months. Toxicol Sci 69(1):244-257.
- +Butenhoff JL, Ehresman DJ, Chang SC, et al. 2009b. Gestational and lactational exposure to potassium perfluorooctanesulfonate (K+PFOS) in rats: Developmental neurotoxicity. Reprod Toxicol 27(3-4):319-330.
- Butenhoff JL, Gaylor DW, Moore JA, et al. 2004a. Characterization of risk for general population exposure to perfluorooctanoate. Regul Toxicol Pharmacol 39(3):363-380.
- +Butenhoff JL, Kennedy GL, Chang S-C, et al. 2012c. Chronic dietary toxicity and carcinogenicity study with ammonium perfluorooctanoate in Sprague Dawley rats. Toxicology 298:1-13.
- +Butenhoff JL, Kennedy GL, Frame SR, et al. 2004b. The reproductive toxicology of ammonium perfluorooctanoate (APFO) in the rat. Toxicology 196(1-2):95-116.
- Butenhoff JL, Kennedy GL, Hinderliter PM, et al. 2004c. Pharmacokinetics of perfluorooctanoate in Cynomolgus monkeys. Toxicol Sci 82:394-406.
- Butenhoff JL, Kennedy GL, Jung R, et al. 2014. Evaluation of perfluorooctanoate for potential genotoxicity. Toxicol Rep 1:252-270.
- Butenhoff JL, Pieterman E, Ehresman DJ, et al. 2012d. Distribution of perfluorooctanesulfonate and perfluorooctanoate into human plasma lipoprotein fractions. Toxicol Lett 210(3):360-365. 10.1016/j.toxlet.2012.02.013.
- Butt CM, Mabury SA, Kwan M, et al. 2008. Spatial trends of perfluoroalkyl compounds in ringed seals (*Phoca hispida*) from the Canadian Arctic. Environ Toxicol Chem 27(3):542-553.
- Butt CM, Mabury SA, Muir DCG, et al. 2007a. Prevalence of long-chained perfluorinated carboxylates in seabirds from the Canadian Arctic between 1975 and 2004. Environ Sci Technol 41:3521-3528.
- Butt CM, Muir DCG, Stirling I, et al. 2007b. Rapid response of arctic ringed seals to changes in perfluoroalkyl production. Environ Sci Technol 41(1):42-49.
- Byrne S, Seguinot-Medina S, Miller P, et al. 2017. Exposures to polybrominated diphenyl ethers and perfluoroalkyl substances in a remote population of Alaska Natives. Environ Pollut 231(1):387-395.
- Calafat AM, Kuklenyik Z, Caudill SP, et al. 2006a. Perfluorochemicals in pooled serum samples from United States residents in 2001 and 2002. Environ Sci Technol 40:2128-2134.
- Calafat AM, Kuklenyik Z, Reidy JA, et al. 2007a. Serum concentrations of 11 polyfluoroalkyl compounds in the U.S. population: Data from the National Health and Nutrition Examination Survey (NHANES) 1999-2000. Environ Sci Technol 41:2237-2242.
- Calafat AM, Needham LL, Kuklenyik Z, et al. 2006b. Perfluorinated chemicals in selected residents of the American continent. Chemosphere 63:490-496.
- Calafat AM, Wong L, Kuklenyik Z, et al. 2007b. Polyfluoroalkyl chemicals in the U.S. population: Data from the National Health and Nutrition Examination Survey (NHANES) 2003-2004 and comparisons with NHANES 1999-2000. Environ Health Perspect 115:1596-1602.

PERFLUOROALKYLS 769 8. REFERENCES

- Callan AC, Rotander A, Thompson K, et al. 2016. Maternal exposure to perfluoroalkyl acids measured in whole blood and birth outcomes in offspring. Sci Total Environ 569-570:1107-1113. http://doi.org/10.1016/j.scitotenv.2016.06.177.
- Campbell S, Raza M, Pollack AZ. 2016. Perfluoroalkyl substances and endometriosis in US women in NHANES 2003-2006. Reprod Toxicol 65:230-235. http://doi.org/10.1016/j.reprotox.2016.08.009.
- Cao W, Liu X, Liu X, et al. 2018. Perfluoroalkyl substances in umbilical cord serum and gestational and postnatal growth in a Chinese birth cohort. Environ Int 116:197-205. http://doi.org/10/1016/j.envint.2018.04.015.
- Cardenas A, Gold DR, Hauser R, et al. 2017. Plasma concentrations of per- and polyfluoroalkyl substances at baseline and associations with glycemic indicators and diabetes incidence among high-risk adults in the diabetes prevention program trial. Environ Health Perspect 125(10):107001. http://doi.org/10.1289/ehp1612.
- Cariou R, Veyrand B, Yamada A, et al. 2015. Perfluoroalkyl acid (PFAA) levels and profiles in breast milk, maternal and cord serum of French women and their newborns. Environ Int 84:71-81.
- Carr CK, Watkins AM, Wolf CJ, et al. 2013. Testing for departures from additivity in mixtures of perfluoroalkyl acids (PFAAs). Toxicology 306:169-175. 10.1016/j.tox.2013.02.016.
- CAS. 2008. Registry. Columbus, OH: Chemical Abstracts Service. http://stnweb.cas.org/. March 14, 2008
- +Case MT, York RG, Christian MS. 2001. Rat and rabbit oral developmental toxicology studies with two perfluorinated compounds. Int J Toxicol 20(2):101-109.
- Cattley RC, DeLuca J, Elcombe C, et al. 1998. Do peroxisome proliferating compounds pose a hepatocarcinogenic hazard to humans? Regul Toxicol Pharmacol 27:47-60.
- CDC. 2013. Fourth national report on human exposure to environmental chemicals. Updated tables, September 2013. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.
- CDC. 2015. Fourth national report on human exposure to environmental chemicals. February 2015. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. https://www.cdc.gov/biomonitoring/pdf/fourthreport_updatedtables_feb2015.pdf. May 25, 2017.
- CDC. 2018. Fourth national report on human exposure to environmental chemicals. Updated Tables, March 2018. Atlanta, GA: Centers for Disease Control and Prevention, Department of Health and Human Services.
 - https://www.cdc.gov/exposurereport/pdf/FourthReport_UpdatedTables_Volume1_Mar2018.pdf. April 23, 2018.
- CDC. 2019. Fourth national report on human exposure to environmental chemicals, updated tables (January 2019). Atlanta, GA: Centers for Disease Control and Prevention, U.S. Department of Health and Human Services.
 - https://www.cdc.gov/exposurereport/pdf/FourthReport_UpdatedTables_Volume1_Jan2019-508.pdf. March 4, 2019.
- Celik A, Eke D, Ekinci SY, et al. 2013. The protective role of curcumin on perfluorooctane sulfonate-induced genotoxicity: Single cell gel electrophoresis and micronucleus test. Food Chem Toxicol 53:249-255.
- CEMN. 2008. CEMC focussing on ionizing surfactants. Canadian Environmental Modelling Network. http://www.trentu.ca/academic/aminss/envmodel/cemn/NewsReports/CEMNnews200804.pdf. June 24, 2008.
- Chan E, Burstyn I, Cherry N, et al. 2011. Perfluorinated acids and hypothyroxinemia in pregnant women. Environ Res 111(4):559-564.
- Chang ET, Adami H, Boffetta P, et al. 2014. A critical review of perfluorooctanoate and perfluorooctanesulfonate exposure and cancer risk in humans. Crit Rev Toxicol 44:1-81.

PERFLUOROALKYLS 770 8. REFERENCES

- +Chang S, Allen BC, Andres KL, et al. 2017. Evaluation of serum lipid, thyroid, and hepatic clinical chemistries in association with serum perfluorooctanesulfonate (PFOS) in cynomolgus monkeys after oral dosing with potassium PFOS. Toxicol Sci 156(2):387-401. http://doi.org/10.1093/toxsci/kfw267.
- +Chang S, Butenhoff JL, Parker GA, et al. 2018. Reproductive and developmental toxicity of potassium perfluorohexanesulfonate in CD-1 mice. Reprod Toxicol 78:150-168.
- Chang S, Das K, Ehresman DJ, et al. 2008a. Comparative pharmacokinetics of perfluorobutyrate (PFBA) in rats, mice, monkeys, and humans and relevance to human exposure via drinking water. Toxicol Sci 104(1):40-53.
- +Chang S, Ehresman DJ, Bjork JA, et al. 2009. Gestational and lactational exposure to potassium perfluorooctanesulfonate (K+PFOS) in rats: Toxicokinetics, thyroid hormone status, and related gene expression. Reprod Toxicol 27(3-4):387-399.
- Chang S, Noker PE, Gorman GS, et al. 2012. Comparative pharmacokinetics of perfluorooctanesulfonate (PFOS) in rats, mice, and monkeys. Reprod Toxicol 33(4):428-440.
- +Chang S, Thibodeaux JR, Eastvold ML, et al. 2008b. Thyroid hormone status and pituitary function in adult rats given oral doses of perfluorooctanesulfonate (PFOS). Toxicology 243:330-339.
- Château-Degat ML, Pereg D, Dallaire R, et al. 2010. Effects of perfluorooctanesulfonate exposure on plasma lipid levels in the Inuit population of Nunavik (Northern Quebec). Environ Res 110(7):710-717.
- ChemIDplus. 2008. Perfluoroalkyls. ChemIDplus. Bethesda, MD: U.S. National Library of Medicine. http://sis.nlm.nih.gov/chemical.html. July 10, 2008.
- ChemIDplus. 2017. Ammonium perfluorooctanoate. ChemIDplus. Bethesda, MD: U.S. National Library of Medicine. http://sis.nlm.nih.gov/chemical.html. December 22, 2017.
- Chen F, Yin S, Kelly BC, et al. 2017a. Isomer-specific transplacental transfer of perfluoroalkyl acids: Results from a survey of paired maternal, cord sera, and placentas. Environ Sci Technol 51(10):5756-5763. http://doi.org/10.1021/acs.est.7b00268.
- +Chen Y, Zhou L, Xu J, et al. 2017b. Maternal exposure to perfluorooctanoic acid inhibits luteal function via oxidative stress and apoptosis in pregnant mice. Reprod Toxicol 69:159-166. http://doi.org/10.1016/j.reprotox.2017.02.010.
- Chen MH, Ha EH, Liao HF, et al. 2013. Perfluorinated compound levels in cord blood and neurodevelopment at 2 years of age. Epidemiology 24(6):800-808. 10.1097/EDE.0b013e3182a6dd46.
- Chen MH, Ha EH, Wen TW, et al. 2012a. Perfluorinated compounds in umbilical cord blood and adverse birth outcomes. PLoS ONE 7(8):e42474.
- +Chen T, Zhang L, Yue JQ, et al. 2012b. Prenatal PFOS exposure induces oxidative stress and apoptosis in the lung of rat off-spring. Reprod Toxicol 33(4):538-545.
- Chen YM, Guo LH. 2009. Fluorescence study on site-specific binding of perfluoroalkyl acids to human serum albumin. Arch Toxicol 83(3):255-261.
- +Cheng J, Fujimura M, Zhao W, et al. 2013. Neurobehavioral effects, c-Fos/Jun expression and tissue distribution in rat offspring prenatally co-exposed to MeHg and PFOA: PFOA impairs Hg retention. Chemosphere 91(6):758-764.
- Cheng W, Ng CA. 2017. A permeability-limited physiologically based pharmacokinetic (PBPK) model for perfluorooctanoic acid (PFOA) in male rats. Environ Sci Technol 51(17):9930-9939. 10.1021/acs.est.7b02602.
- Cheng X, Klaassen CD. 2008a. Critical role of PPAR-α in perfluorooctanoic acid- and perfluorodecanoic acid-induced downregulation of Oatp uptake transporters in mouse livers. Toxicol Sci 106(1):37-45. 10.1093/toxsci/kfn161.
- Cheng X, Klaassen CD. 2008b. Perfluorocarboxylic acids induce cytochrome P450 enzymes in mouse liver through activation of PPAR-alpha and CAR transcription factors. Toxicol Sci 106(1):29-36. 10.1093/toxsci/kfn147.

PERFLUOROALKYLS 771 8. REFERENCES

- Chengelis CP, Kirkpatrick JB, Myers NR, et al. 2009a. Comparison of the toxicokinetic behavior of perfluorohexanoic acid (PFHxA) and nonafluorobutane-1-sulfonic acid (PFBS) in Cynomolgus monkeys and rats. Reprod Toxicol 27:400-406.
- +Chengelis CP, Kirkpatrick JB, Radovsky A, et al. 2009b. A 90-day repeated dose oral (gavage) toxicity study of perfluorohexanoic acid (PFHxA) in rats (with functional observational battery and motor activity determinations). Reprod Toxicol 27(3-4):342-351. http://doi.org/10.1016/j.reprotox.2009.01.006.
- Choksi NY, Jahnke GD, St Hilaire C, et al. 2003. Role of thyroid hormones in human and laboratory animal reproductive health. Birth Defects Res B Dev Reprod Toxicol 68(6):479-491. http://doi.org/10.1002/bdrb.10045.
- Christensen KY, Maisonet M, Rubin C, et al. 2011. Exposure to polyfluoroalkyl chemicals during pregnancy is not associated with offspring age at menarche in a contemporary British cohort. Environ Int 37(1):129-135.
- Christensen KY, Raymond M, Thompson BA, et al. 2016. Perfluoroalkyl substances in older male anglers in Wisconsin. Environ Int 91:312-318. 10.1016/j.envint.2016.03.012.
- Clara M, Gans O, Weiss S, et al. 2009. Perfluorinated alkylated substances in the aquatic environment: An Austrian case study. Water Res 43(18):4760-4768. 10.1016/j.watres.2009.08.004.
- Clarke BO, Smith SR. 2011. Review of 'emerging' organic contaminants in biosolids and assessment of international research priorities for the agricultural use of biosolids. Environ Int 37(1):226-247. 10.1016/j.envint.2010.06.004.
- Clewell HJ, Andersen ME. 1985. Risk assessment extrapolations and physiological modeling. Toxicol Ind Health 1(4):111-131.
- Conder JM, Hoke RA, De Wolf W, et al. 2008. Are PFCAs bioaccumulative? A critical review and comparison with regulatory criteria and persistent lipophilic compounds. Environ Sci Technol 42(4):995-1003.
- Connecticut DPH. 2016. Drinking water action level for perfluorinated alkyl substances (PFAS). Hartford, CT: Connecticut Department of Public Health. https://portal.ct.gov/-/media/Departments-and-
 - Agencies/DPH/dph/environmental_health/eoha/Toxicology_Risk_Assessment/DrinkingWaterAction LevelPerfluorinatedAlkylSubstances-PFAS.pdf?la=en. December 6, 2018.
- Consonni D, Straif K, Symons JM, et al. 2013. Cancer risk among tetrafluoroethylene synthesis and polymerization workers. Am J Epidemiol 178(3):350-358.
- Convertino M, Church TR, Olsen GW, et al. 2018. Stochastic pharmacokinetic-pharmacodynamic modeling for assessing the systemic health risk of perfluorooctanoate (PFOA). Toxicol Sci 163(1):293-306. http://doi.org/10.1093/toxsci/kfy035.
- Conway B, Innes KE, Long D. 2016. Perfluoroalkyl substances and beta cell deficient diabetes. J Diabetes Complications 30(6):993-998. http://doi.org/10.1016/j.jdiacomp.2016.05.001.
- +Cook JC, Murray SM, Frame SR, et al. 1992. Induction of Leydig cell adenomas by ammonium perfluorooctanoate: A possible endocrine-related mechanism. Toxicol Appl Pharmacol 113(2):209-217.
- Corsini E, Luebke RW, Germolec DR, et al. 2014. Perfluorinated compounds: Emerging POPs with potential immunotoxicity. Toxicol Lett 230(2):263-270. 10.1016/j.toxlet.2014.01.038.
- Corton JC, Cunningham ML, Hummer BT, et al. 2014. Mode of action framework analysis for receptor-mediated toxicity: The peroxisome proliferator-activated receptor alpha (PPARα) as a case study. Crit Rev Toxicol 4444(1):1-49. 10.3109/10408444.2013.835784.
- Costa G. 2004. Report on the meeting held on Friday 20th and Saturday 21st 2004 at the Inn at Montchanin Village (Wilmington, USA) with 3M and DuPont delegations. DuPont. Submitted to the U.S. Environmental Protection Agency. AR226-1866.
- Costa G, Sartori S, Consonni D. 2009. Thirty years of medical surveillance in perfluorooctanoic acid production workers. J Occup Environ Med 51(3):364-372.

PERFLUOROALKYLS 772 8. REFERENCES

- Crawford NM, Fenton SE, Strynar M, et al. 2017. Effects of perfluorinated chemicals on thyroid function, markers of ovarian reserve, and natural fertility. Reprod Toxicol 69:53-59. http://doi.org/10.1016/j.reprotox.2017.01.006.
- Croes K, Colles A, Koppen G, et al. 2012. Persistent organic pollutants (POPs) in human milk: A biomonitoring study in rural areas of Flanders (Belgium). Chemosphere 89:988-994.
- +Cui L, Zhou QF, Liao CY, et al. 2009. Studies on the toxicological effects of PFOA and PFOS on rats using histological observation and chemical analysis. Arch Environ Contam Toxicol 56(2):338-349.
- +Curran I, Hierlihy SL, Liston V, et al. 2008. Altered fatty acid homeostasis and related toxicologic sequelae in rats exposed to dietary potassium perfluorooctanesulfonate (PFOS). J Toxicol Environ Health A 71(23):1526-1541.
- D'Agostino LA, Mabury SA. 2017. Certain perfluoroalkyl and polyfluoroalkyl substances associated with aqueous film forming foam are widespread in Canadian surface waters. Environ Sci Technol 51(23):13603-13613. http://doi.org/10.1021/acs.est.7b03994.
- Dai J, Li M, Jin Y, et al. 2006. Perfluorooctanesulfonate and perfluorooctanoate in red panda and giant panda from China. Environ Sci Technol 40:5647-5652.
- Dallaire R, Ayotte P, Pereg D, et al. 2009. Determinants of plasma concentrations of perfluorooctanesulfonate and brominated organic compounds in Nunavik Inuit adults (Canada). Environ Sci Technol 43(13):5130-5136.
- Dalsager L, Christensen N, Husby S, et al. 2016. Association between prenatal exposure to perfluorinated compounds and symptoms of infections at age 1-4 years among 359 children in the Odense Child Cohort. Environ Int 96:58-64.
- Darrow LA, Groth AC, Winquist A, et al. 2016. Modeled perfluorooctanoic acid (PFOA) exposure and liver function in a mid-Ohio Valley community. Environ Health Perspect 124(8):1227-1233.
- Darrow LA, Howards PP, Winquist A, et al. 2014. PFOA and PFOS serum levels and miscarriage risk. Epidemiology 25(4):505-512. 10.1097/ede.0000000000000103.
- Darrow LA, Stein CR, Steenland K. 2013. Serum perfluorooctanoic acid and perfluorooctane sulfonate concentrations in relation to birth outcomes in the Mid-Ohio Valley, 2005-2010. Environ Health Perspect 121(10):1207-1213.
- +Das KP, Grey BE, Zehr RD, et al. 2008. Effects of perfluorobutyrate exposure during pregnancy in the mouse. Toxicol Sci 105(1):173-181.
- +Das KP, Grey BE, Rosen MB, et al. 2015. Developmental toxicity of perfluorononanoic acid in mice. Reprod Toxicol 51:133-144. 10.1016/j.reprotox.2014.12.012.
- +Das KP, Wood CR, Lin MT, et al. 2017. Perfluoroalkyl acids-induced liver steatosis: Effects on genes controlling lipid homeostasis. Toxicology 378:37-52. 10.1016/j.tox.2016.12.007.
- Dauchy X, Boiteux V, Rosin C, et al. 2012. Relationship between industrial discharges and contamination of raw water resources by perfluorinated compounds. Part I: Case study of a fluoropolymer manufacturing plant. Bull Environ Contam Toxicol 89(3):525-530. 10.1007/s00128-012-0704-x.
- Davies B, Morris T. 1993. Physiological parameters in laboratory animals and humans. Pharm Res 10(7):1093-1095. http://www.ncbi.nlm.nih.gov/pubmed/8378254.
- Davis KL, Aucoin MD, Larsen BS, et al. 2007. Transport of ammonium perfluorooctanoate in environmental media near a fluoropolymer manufacturing facility. Chemosphere 67:2011-2019.
- Deb S, Puthanveetil P, Sakharkar P. 2018. A population-based cross-sectional study of the association between liver enzymes and lipid levels. Int J Hepatol 6(3):1-8.
- de Cock M, de Boer MR, Lamoree M, et al. 2014. First year growth in relation to prenatal exposure to endocrine disruptors a Dutch prospective cohort study. Int J Environ Res Public Health 11(7):7001-7021. 10.3390/ijerph110707001.
- Delinsky AD, Strynar MJ, McCann PJ, et al. 2010. Geographical distribution of perfluorinated compounds in fish from Minnesota lakes and rivers. Environ Sci Technol 44(7):2549-2554. 10.1021/es903777s.

PERFLUOROALKYLS 773 8. REFERENCES

- Delinsky AD, Strynar MJ, Nakayama SF, et al. 2009. Determination of ten perfluorinated compounds in bluegill sunfish (*Lepomis macrochirus*) fillets. Environ Res 109:975-984.
- D'eon JC, Mabury SA. 2007. Production of perfluorinated carboxylic acids (PFCAs) from the biotransformation of polyfluoroalkyl phosphate surfactants (PAPS): Exploring routes of human contamination. Environ Sci Technol 41(13):4799-4805.
- D'eon JC, Crozier PW, Furdui VI, et al. 2009. Observation of a commercial fluorinated material, the polyfluoroalkyl phosphoric acid diesters, in human sera, wastewater treatment plant sludge, and paper fibers. Environ Sci Technol 43(12):4589-4594.
- D'eon JC, Hurley MD, Wallington TJ, et al. 2006. Atmospheric chemistry of n-methyl perfluorobutane sulfonamidoethanol, C4F9SO2N (Ch3)CH2CH2OH: Kinetics and mechanism of reaction with OH. Environ Sci Technol 40:1862-1868.
- De Silva AO, Benskin JP, Martin LJ, et al. 2009. Disposition of perfluorinated acid isomers in Sprague-Dawley rats. Part 2: Subchronic dose. Environ Toxicol Chem 28(3):555-567.
- De Silva AO, Mabury SA. 2006. Isomer distribution of perfluorocarboxylates in human blood: Potential correlation to source. Environ Sci Technol 40:2903-2909.
- De Silva AO, Spencer C, Ho KC, et al. 2016. Perfluoroalkylphosphinic acids in northern pike (*Esox lucius*), double-crested cormorants (*Phalacrocorax auritus*), and bottlenose dolphins (*Tursiops truncatus*) in relation to other perfluoroalkyl acids. Environ Sci Technol 50(20):10903-10913. http://doi.org/10.1021/acs.est.6b03515.
- De Silva AO, Spencer C, Scott BF, et al. 2011. Detection of a cyclic perfluorinated acid, perfluoroethylcyclohexane sulfonate, in the Great Lakes of North America. Environ Sci Technol 45:8060-8066.
- de Vos MG, Huijbregts MAJ, van den Heuvel-Greve MJ, et al. 2008. Accumulation of perfluorooctane sulfonate (PFOS) in the food chain of the Western Scheldt estuary: Comparing field measurements with kinetic modeling. Chemosphere 70:1766-1773.
- +DeWitt JC, Copeland CB, Luebke RW. 2009. Suppression of humoral immunity by perfluorooctanoic acid is independent of elevated serum corticosterone concentration in mice. Toxicol Sci 109:106-112
- +DeWitt JC, Copeland CB, Strynar MJ, et al. 2008. Perfluorooctanoic acid-induced immunomodulation in adult C57BL/6J or C57BL/6N female mice. Environ Health Perspect 116(5):644-650.
- DeWitt JC, Peden-Adams MM, Keller JM, et al. 2012. Immunotoxicity of perfluorinated compounds: Recent developments. Toxicol Pathol 40(2):300-311. 10.1177/0192623311428473.
- +DeWitt JC, Williams WC, Creech NJ, et al. 2016. Suppression of antigen-specific antibody responses in mice exposed to perfluorooctanoic acid: Role of PPARalpha and T- and B-cell targeting. J Immunotoxicol 13(1):38-45. 10.3109/1547691x.2014.996682.
- Dhingra R, Darrow LA, Klein M, et al. 2016a. Perfluorooctanoic acid exposure and natural menopause: A longitudinal study in a community cohort. Environ Res 146:323-330. 10.1016/j.envres.2015.12.037.
- Dhingra R, Lally C, Darrow LA, et al. 2016b. Perfluorooctanoic acid and chronic kidney disease: Longitudinal analysis of a Mid-Ohio Valley community. Environ Res 145:85-92. 10.1016/j.envres.2015.11.018.
- Dhingra R, Winquist A, Darrow LA, et al. 2017. A study of reverse causation: Examining the associations of perfluorooctanoic acid serum levels with two outcomes. Environ Health Perspect 125(3):416-421. http://doi.org/10.1289/ehp273.
- Dinglasan-Panlilio MJA, Mabury SA. 2006. Significant residual fluorinated alcohols present in various fluorinated materials. Environ Sci Technol 40:1447-1453.
- Dixon D, Reed CE, Moore AB, et al. 2012. Histopathologic changes in the uterus, cervix and vagina of immature CD-1 mice exposed to low doses of perfluorooctanoic acid (PFOA) in a uterotrophic assay. Reprod Toxicol 33(4):506-512. 10.1016/j.reprotox.2011.10.011.

PERFLUOROALKYLS 774 8. REFERENCES

- DoD. 2018. Addressing perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). Office of Economic Adjustment. U.S. Department of Defense. http://www.oea.gov/resource/addressing-perfluorooctane-sulfonate-pfos-and-perfluorooctanoic-acid-pfoa. March 8, 2019.
- DOE. 2018a. Protective Action Criteria (PAC) with AEGLs, ERPGs, & TEELs: Rev. 29A, June 2018. Oak Ridge, TN: U.S. Department of Energy. https://sp.eota.energy.gov/pac/. July 26, 2018.
- DOE. 2018b. Table 3: Protective Action Criteria (PAC) Rev. 29a based on applicable 60-minute AEGLs, ERPGs, or TEELs. The chemicals are listed by CASRN. June 2018. Oak Ridge, TN: U.S. Department of Energy. https://sp.eota.energy.gov/pac/docs/Revision_29A_Table3.pdf. July 26, 2018.
- Domazet SL, Grontved A, Timmermann AG, et al. 2016. Longitudinal associations of exposure to perfluoroalkylated substances in childhood and adolescence and indicators of adiposity and glucose metabolism 6 and 12 years later: The European youth heart study. Diabetes Care 39(10):1745-1751. http://doi.org/10.2337/dc16-0269.
- Domingo JL, Ericson-Jogsten I, Perello G, et al. 2012a. Human exposure to perfluorinated compounds in Catalonia, Spain: Contribution of drinking water and fish and shellfish. J Agric Food Chem 60(17):4408-4415.
- Domingo JL, Jogsten IE, Eriksson U, et al. 2012b. Human dietary exposure to perfluoroalkyl substances in Catalonia, Spain. Temporal trend. Food Chem 135:1575-1582.
- Donauer S, Chen A, Xu Y, et al. 2015. Prenatal exposure to polybrominated diphenyl ethers and polyfluoroalkyl chemicals and infant neurobehavior. J Pediatr 166(3):736-742. 10.1016/j.jpeds.2014.11.021.
- +Dong GH, Liu MM, Wang D, et al. 2011. Sub-chronic effect of perfluorooctanesulfonate (PFOS) on the balance of type 1 and type 2 cytokine in adult C57BL6 mice. Arch Toxicol 85(10):1235-1244.
- Dong GH, Tung KY, Tsai CH, et al. 2013. Serum polyfluoroalkyl concentrations, asthma outcomes, and immunological markers in a case-control study of Taiwanese children. Environ Health Perspect 121(4):507-513.
- +Dong GH, Zhang YH, Zheng L, et al. 2009. Chronic effects of perfluorooctanesulfonate exposure on immunotoxicity in adult male C57BL/6 mice. Arch Toxicol 83(9):805-815.
- DRBC. 2013. Contaminants of emerging concern in the tidal Delaware River: Pilot monitoring survey 2007-2009. Delaware River Basin Commission. http://www.nj.gov/drbc/library/documents/contaminants-of-emerging-concernAug2013rev.pdf. July 6, 2017.
- Ducatman AM, Zhang J, Fan H. 2015a. Letter to the editor. (Prostate-specific antigen and perfluoroalkyl acids in the C8 health study population. J Occup Environ Med 57(1):111-114). J Occup Environ Med 57(6):e61. 10.1097/jom.000000000000470.
- Ducatman A, Zhang J, Fan H. 2015b. Prostate-specific antigen and perfluoroalkyl acids in the C8 health study population. J Occup Environ Med 57(1):111-114. 10.1097/jom.000000000000319.
- Dufour P, Pirard C, Seghaye MC, et al. 2018. Association between organohalogenated pollutants in cord blood and thyroid function in newborns and mothers from Belgian population. Environ Pollut 238:389-396. http://doi.org/10.1016/j.envpol.2018.03.058.
- DuPont. 2008. Information on PFOA. http://repanet.de/PFOA2/en_US/index.html. April 07, 2008.
- DWQI. 2015. Maximum contaminant level recommendation for perfluorononanoic acid in drinking water. Trenton, NJ: New Jersey Drinking Water Quality Institute. http://www.nj.gov/dep/watersupply/pdf/pfna-recommend-final.pdf. December 18, 2017.
- DWQI. 2017. Maximum contaminant level recommendation for perfluorooctanoic acid in drinking water. Trenton, NJ: New Jersey Drinking Water Quality Institute. http://www.nj.gov/dep/watersupply/pdf/pfoa-recommend.pdf. December 18, 2017.
- DWQI. 2018a. Drinking water standards by constituent. Trenton, NJ: New Jersey Drinking Water Quality Institute. https://www.nj.gov/dep/standards/drinking%20water.pdf. November 30, 2018.

PERFLUOROALKYLS 775 8. REFERENCES

- DWQI. 2018b. Maximum contaminant level recommendation for perfluorooctane sulfonate in drinking water. Trenton, NJ: New Jersey Drinking Water Quality Institute. https://www.state.nj.us/dep/watersupply/pdf/pfos-recommendation-summary.pdf. November 30, 2018.
- Eggen T, Moeder M, Arukwe A. 2010. Municipal landfill leachates: A significant source for new and emerging pollutants. Sci Total Environ 408:5147-5157.
- Ehresman DJ, Froehlich JW, Olsen GW, et al. 2007. Comparison of human whole blood, plasma, and serum matrices for the determination of perfluorooctanesulfonate (PFOS), perfluorooctanoate (PFOA), and other fluorochemicals. Environ Res 103:176-184.
- Eke D, Celik A. 2016. Curcumin prevents perfluorooctane sulfonate-induced genotoxicity and oxidative DNA damage in rat peripheral blood. Drug Chem Toxicol 39(1):97-103. 10.3109/01480545.2015.1041601.
- +Elcombe CR, Elcombe BM, Foster JR, et al. 2010. Hepatocellular hypertrophy and cell proliferation in Sprague-Dawley rats following dietary exposure to ammonium perfluorooctanoate occurs through increased activation of the xenosensor nuclear receptors PPARα and CAR/PXR. Arch Toxicol 84(10):787-798.
- +Elcombe CR, Elcombe BM, Foster JR, et al. 2012b. Evaluation of hepatic and thyroid responses in male Sprague Dawley rats for up to eighty-four days following seven days of dietary exposure to potassium perfluorooctanesulfonate. Toxicology 293(1-3):30-40.
- +Elcombe CR, Elcombe BM, Foster JR, et al. 2012a. Hepatocellular hypertrophy and cell proliferation in Sprague-Dawley rats from dietary exposure to potassium perfluorooctanesulfonate results from increased expression of xenosensor nuclear receptors PPARα and CAR/PXR. Toxicology 293(1-3):16-29.
- Eldasher LM, Wen X, Little MS, et al. 2013. Hepatic and renal Bcrp transporter expression in mice treated with perfluorooctanoic acid. Toxicology 306:108-113.
- Ellis DA, Martin JW, De Silva AO, et al. 2004. Degradation of fluorotelomer alcohols: A likely atmospheric source of perfluorinated carboxylic acids. Environ Sci Technol 27:3316-3321.
- Ellis DA, Martin JW, Mabury SA, et al. 2003. Atmospheric lifetime of fluorotelomer alcohols. Environ Sci Technol 37(17):3816-3820. http://doi.org/10.1021/es034136j.
- Emmett EA, Shofer FS, Zhang H, et al. 2006a. Community exposure to perfluorooctanoate: Relationships between serum concentrations and exposure sources. J Occup Environ Med 48:759-770.
- Emmett EA, Zhang H, Shofer FS, et al. 2006b. Community exposure to perfluorooctanoate: Relationships between serum levels and certain health parameters. J Occup Environ Med 48(8):771-779.
- Emmett EA, Zhang H, Shofer FS, et al. 2009. Development and successful application of a "community-first" communication model for community-based environmental health research. J Occup Environ Med 51(2):146-156.
- EPA. 1988. Recommendations for and documentation of biological values for use in risk assessment. Washington, DC: U.S. Environmental Protection Agency. PB88179874.
- EPA. 2002. Perfluoroalkyl sulfonates; significant new use rule. U.S. Environmental Protection Agency. Fed Regist 67(236):72854-72867.
- EPA. 2005a. Draft risk assessment of the potential human health effects associated with exposure to perfluorooctanoic acid and its salts. U.S. Environmental Protection Agency. http://www.epa.gov/opptintr/pfoa/pubs/pfoarisk.pdf. June 26, 2007.
- EPA. 2005b. Toxic chemical release inventory reporting forms and instructions: Revised 2004 version. Section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986). U.S. Environmental Protection Agency. Office of Environmental Information. EPA260B05001.

PERFLUOROALKYLS 776 8. REFERENCES

- EPA. 2005c. Guidelines for carcinogen risk assessment. Washington, DC: U.S. Environmental Protection Agency. EPA630P03001F. http://www.epa.gov/raf/publications/pdfs/CANCER_GUIDELINES_FINAL_3-25-05.PDF. December 10, 2014.
- EPA. 2006. SAB review of EPA's draft risk assessment of potential human health effects associated with PFOA and its salts. U.S. Environmental Protection Agency. http://yosemite.epa.gov/sab/sabproduct.nsf/A3C83648E77252828525717F004B9099/\$File/sab_06_006.pdf. April 24, 2008.
- EPA. 2007a. Perfluoroalkyl sulfonates; significant new use rule. U.S. Environmental Protection Agency. Fed Regist 72:57222-57235.
- EPA. 2007b. Quarterly MOU status report #6: Phase II monitoring/sampling work plan, DuPont Washington Works (PFOA site-related environmental assessment program), Appendices 3.1 through 5.1. U.S. Environmental Protection Agency. EPA-HQ-OPPT-2004-0113-0242.1. http://www.regulations.gov/fdmspublic/component/main?main=DocketDetail&d=EPA-HQ-OPPT-2004-0113. May 18, 2009.
- EPA. 2008a. Perfluorooctanoic acid (PFOA) and fluorinated telomers. U.S. Environmental Protection Agency. http://www.epa.gov/oppt/pfoa/. May 29, 2008.
- EPA. 2008b. Non-confidential IUR production volume information. Inventory updating reporting. U.S. Environmental Protection Agency. http://www.epa.gov/opptintr/iur/tools/data/2002-vol.htm. July 09, 2008.
- EPA. 2008c. Perfluoroalkyls. Substance registry system. U.S. Environmental Protection Agency. http://www.epa.gov/srs/. July 10, 2008.
- EPA. 2008d. Quarterly MOU status report #10: Phase II monitoring/sampling work plan, DuPont Washington Works (PFOA site-related environmental assessment program), text, tables 4.1 through 5.10. U.S. Environmental Protection Agency. EPA-HQ-OPPT-2004-0113-0430. http://www.regulations.gov/fdmspublic/component/main?main=DocketDetail&d=EPA-HQ-OPPT-2004-0113. May 18, 2009.
- EPA. 2009a. PFOS chromium electroplater study. Cleveland, OH: U.S. Environmental Protection Agency-Region 5.
- EPA. 2009b. Perfluorocarboxylic acid content in 116 articles of commerce. Research Triangle Park, NC: U.S. Environmental Protection Agency, National Risk Management Research Laboratory, Office of Research and Development. EPA600R09033.
- EPA. 2009c. Method 537. Determination of selected perfluorinated alkyl acids in drinking water by solid phase extraction and liquid chromatography/tandem mass spectrometry (LC/MS/MS). U.S. Environmental Protection Agency. http://www.epa.gov/microbes/documents/Method%20537_FINAL_rev1.1.pdf. May 5, 2014.
- EPA. 2009d. National primary drinking water regulations. Washington, DC: U.S. Environmental Protection Agency. Office of Ground Water and Drinking Water. EPA 816-F-09-0004. http://water.epa.gov/drink/contaminants/. January 08, 2014.
- EPA. 2010. Quarterly MOU Status Report #17. Phase II. Monitoring/sampling work plan. DuPont Washington Works (OPPT-2004-0113 PFOA site-related environmental assessment program). U.S. Environmental Protection Agency. Project No. 18984356.05013.
- EPA. 2014. Health effects document for perfluorooctanoic acid (PFOA). U.S. Environmental Protection Agency. EPA822R14001. https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=P100IRZ1.txt. December 21, 2017.
- EPA. 2015. Long-chain perfluoroalkyl carboxylate and perfluoroalkyl sulfonate chemical substances: Significant new use rule. U.S. Environmental Protection Agency. Fed Regist 80(13):2885-2898.
- EPA. 2016a. 2010/2015 PFOA Stewardship Program- 2014 annual progress reports. U.S. Environmental Protection Agency. https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/20102015-pfoa-stewardship-program-2014-annual-progress#summary. August 08, 2016.

PERFLUOROALKYLS 777 8. REFERENCES

- EPA. 2016b. Compiled AEGL values. Acute Exposure Guideline Levels (AEGLs) Values. U.S. Environmental Protection Agency. https://www.epa.gov/sites/production/files/2016-03/documents/compiled_aegl_update_.pdf. February 28, 2017.
- EPA. 2016c. The Third Unregulated Contaminant Monitoring Rule (UCMR 3): Data summary, July 2016. U.S. Environmental Protection Agency, Office of Water.
- EPA. 2016d. Chemical Data Access Tool (CDAT). U.S. Environmental Protection Agency. https://java.epa.gov/oppt_chemical_search/. December 09, 2016.
- EPA. 2016e. Drinking water health advisory for perfluorooctanoic acid (PFOA). U.S. Environmental Protection Agency. https://www.epa.gov/sites/production/files/2016-05/documents/pfoa_health_advisory_final-plain.pdf. March 3, 2017.
- EPA. 2016f. Drinking water health advisory for perfluorooctane sulfonate (PFOS). U.S. Environmental Protection Agency. https://www.epa.gov/sites/production/files/2016-05/documents/pfos_health_advisory_final-plain.pdf. March 3, 2017.
- EPA. 2016g. Toxic chemical release inventory reporting forms and instructions: Revised 2016 version. Section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986). U.S. Environmental Protection Agency, Office of Environmental Information. EPA740B16001. https://ofmpub.epa.gov/apex/guideme_ext/guideme_ext/r/files/static/v3321/rfi/RY_2016_RFI.pdf. July 5, 2017.
- EPA. 2016h. Health effects support document for perfluorooctanoic acid (PFOA). U.S. Environmental Protection Agency. EPA822R16003. https://www.epa.gov/sites/production/files/2016-05/documents/pfoa hesd final-plain.pdf. July 6, 2017.
- EPA. 2016i. Health effects support document for perfluorooctane sulfate (PFOS). U.S. Environmental Protection Agency. EPA822R16002. https://www.epa.gov/sites/production/files/2016-05/documents/pfos_hesd_final_508.pdf. July 6, 2017.
- EPA. 2016j. Lifetime health advisories and health effects support documents for perfluorooctanoic acid and perfluorooctanoic sulfonate. Fed Regist 81:33250. https://www.epa.gov/sites/production/files/2016-05/documents/2016-12361.pdf. December 18, 2017.
- EPA. 2018. 2018 Edition of the drinking water standards and health advisories. Washington, DC: U.S. Environmental Protection Agency, Office of Water. EPA822S12001. https://www.epa.gov/sites/production/files/2018-03/documents/dwtable2018.pdf. July 25, 2018.
- +Era S, Harada KH, Toyoshima M, et al. 2009. Cleft palate caused by perfluorooctane sulfonate is caused mainly by extrinsic factors. Toxicology 256(1-2):42-47.
- EPA. 2017. The third Unregulated Contaminant Monitoring Rule (UCMR 3): Data summary, January 2017. U.S. Environmental Protection Agency. https://www.epa.gov/sites/production/files/2017-02/documents/ucmr3-data-summary-january-2017.pdf. July 6, 2017.
- Ericson I, Domingo JL, Nadal M, et al. 2009. Levels of perfluorinated chemicals in municipal drinking water from Catalonia, Spain: Public health implications. Arch Environ Contam Toxicol 57(4):631-638. 10.1007/s00244-009-9375-y.
- Ericson I, Gómez M, Nadal M, et al. 2007. Perfluorinated chemicals in blood of residents in Catalonia (Spain) in relation to age and gender: A pilot study. Environ Int 33:616-623.
- Eriksen KT, Raaschou-Nielsen O, McLaughlin JK, et al. 2013. Association between plasma PFOA and PFOS levels and total cholesterol in a middle-aged Danish population. PLoS ONE 8(2):e56969.
- Eriksen KT, Raaschou-Nielsen O, Sorensen M, et al. 2010. Genotoxic potential of the perfluorinated chemicals PFOA, PFOS, PFBS, PFNA and PFHxA in human HepG2 cells. Mutat Res 700(1-2):39-43. 10.1016/j.mrgentox.2010.04.024.
- Eriksen KT, Sorensen M, McLaughlin JK, et al. 2009. Perfluorooctanoate and perfluorooctanesulfonate plasma levels and risk of cancer in the general Danish population. J Natl Cancer Inst 101(8):605-609.

PERFLUOROALKYLS 778 8. REFERENCES

- Fábrega F, Kumar V, Schuhmacher M, et al. 2014. PBPK modeling for PFOS and PFOA: Validation with human experimental data. Toxicol Lett 230(2):244-251.
- Fábrega F, Nadal M, Schuhmacher M, et al. 2016. Influence of the uncertainty in the validation of PBPK models: A case-study for PFOS and PFOA. Regul Toxicol Pharmacol 77:230-239. 10.1016/j.yrtph.2016.03.009
- +Fairley KJ, Purdy R, Kearns S, et al. 2007. Exposure to the immunosuppressant, perfluorooctanoic acid, enhances the murine IgE and airway hyperreactivity response to ovalbumin. Toxicol Sci 97(2):375-383.
- +Fang X, Feng Y, Shi Z, et al. 2009. Alterations of cytokines and MAPK signaling pathways are related to the immunotoxic effect of perfluorononanoic acid. Toxicol Sci 108(2):367-376. 10.1093/toxsci/kfp019.
- +Fang X, Feng Y, Wang J, et al. 2010. Perfluorononanoic acid-induced apoptosis in rat spleen involves oxidative stress and the activation of caspase-independent death pathway. Toxicology 267(1-3):54-59. 10.1016/j.tox.2009.10.020.
- +Fang X, Gao G, Xue H, et al. 2012a. Exposure of perfluorononanoic acid suppresses the hepatic insulin signal pathway and increases serum glucose in rats. Toxicology 294(2-3):109-115.
- +Fang X, Gao G, Xue H, et al. 2012b. *In vitro* and *in vivo* studies of the toxic effects of perfluorononanoic acid on rat hepatocytes and Kupffer cells. Environ Toxicol Pharmacol 34(2):484-494.
- +Fang X, Zhang L, Feng Y, et al. 2008. Immunotoxic effects of perfluorononanoic acid on BALB/c mice. Toxicol Sci 105(2):312-321.
- Fang X, Zou S, Zhao Y, et al. 2012c. Kupffer cells suppress perfluorononanoic acid-induced hepatic peroxisome proliferator-activated receptor alpha expression by releasing cytokines. Arch Toxicol 86(10):1515-1525. http://doi.org/10.1007/s00204-012-0877-4.
- Fasano WJ, Carpenter SC, Gannon SA, et al. 2006. Absorption, distribution, metabolism, and elimination of 8-2 fluorotelomer alcohol in the rat. Toxicol Sci 91(2):341-355.
- Fasano WJ, Kennedy GL, Szostek B, et al. 2005. Penetration of ammonium perfluorooctanoate through rat and human skin *in vitro*. Drug Chem Toxicol 28(1):79-90.
- FDA. 2013. Everything added to food in the United States (EAFUS). Washington, DC: U.S. Food and Drug Administration. http://www.accessdata.fda.gov/scripts/fcn/fcnnavigation.cfm?rpt=eafuslisting. February 28, 2017.
- FDA. 2018. Substances Added to Food. Washington, DC: U.S. Food and Drug Administration. https://www.accessdata.fda.gov/scripts/fdcc/?set=FoodSubstances. July 26, 2018.
- Fei C, Olsen J. 2011. Prenatal exposure to perfluorinated chemicals and behavioral or coordination problems at age 7 years. Environ Health Perspect 119(4):573-578.
- Fei C, McLaughlin JK, Lipworth L, et al. 2009. Maternal levels of perfluorinated chemicals and subfecundity. Hum Reprod 24(5):1200-1205.
- Fei C, McLaughlin JK, Lipworth L, et al. 2008b. Prenatal exposure to perfluorooctanoate (PFOA) and perfluorooctanesulfonate (PFOS) and maternally reported developmental milestones in infancy. Environ Health Perspect 116(10):1391-1395.
- Fei C, McLaughlin JK, Tarone RE, et al. 2007. Perfluorinated chemicals and fetal growth: A study within the Danish National Birth Cohort. Environ Health Perspect 115:1677-1682.
- Fei C, McLaughlin JK, Tarone RE, et al. 2008a. Fetal growth indicators and perfluorinated chemicals: A study in the Danish National Birth Cohort. Am J Epidemiol 168(1):66-72.
- Fei C, McLaughlin JK, Lipworth L, et al. 2010. Prenatal exposure to PFOA and PFOS and risk of hospitalization for infectious diseases in early childhood. Environ Res 110(8):773-777. 10.1016/j.envres.2010.08.004.
- Fei C, Weinberg CR, Olsen J. 2012. Commentary: Perfluorinated chemicals and time to pregnancy: A link based on reverse causation? Epidemiology 23(2):264-266.

PERFLUOROALKYLS 779 8. REFERENCES

- +Feng X, Cao X, Zhao S, et al. 2017. Exposure of pregnant mice to perfluorobutanesulfonate causes hypothyroxinemia and developmental abnormalities in female offspring. Toxicol Sci 155(2):409-419. http://doi.org/10.1093/toxsci/kfw219.
- +Feng Y, Fang X, Shi Z, et al. 2010. Effects of PFNA exposure on expression of junction-associated molecules and secretory function in rat Sertoli cells. Reprod Toxicol 30(3):429-437. 10.1016/j.reprotox.2010.05.010.
- +Feng Y, Shi Z, Fang X, et al. 2009. Perfluorononanoic acid induces apoptosis involving the Fas death receptor signaling pathway in rat testis. Toxicol Lett 190(2):224-230. 10.1016/j.toxlet.2009.07.020.
- Fenton SE, Reiner JL, Nakayama SF, et al. 2009. Analysis of PFOA in dosed CD-1 mice. Part 2. Disposition of PFOA in tissues and fluids from pregnant and lactating mice and their pups. Reprod Toxicol 27(3-4):365-372.
- Fernández Freire P, Pérez Martin JM, Herrero O, et al. 2008. *In vitro* assessment of the cytotoxic and mutagenic potential of perfluorooctanoic acid. Toxicol in Vitro 22:1228-1233.
- +Filgo AJ, Quist EM, Hoenerhoff MJ, et al. 2015a. Perfluorooctanoic Acid (PFOA)-induced liver lesions in two strains of mice following developmental exposures: PPARalpha is not required. Toxicol Pathol 43(4):558-568. 10.1177/0192623314558463.
- +Filgo AJ, Quist EM, Hoenerhoff MJ, et al. 2015b. Supplemental data to perfluorooctanoic acid (PFOA)-induced liver lesions in two strains of mice following developmental exposures: PPARalpha is not required. [Toxicol Pathol 43(4):558-568]. Toxicol Pathol 10.1177/0192623314558463.
- Fisher M, Arbuckle TE, Wade M, et al. 2013. Do perfluoroalkyl substances affect metabolic function and plasma lipids? Analysis of the 2007-2009, Canadian Health Measures Survey (CHMS) Cycle 1. Environ Res 121:95-103.
- Fisher M, Arbuckle TE, Liang CL, et al. 2016. Concentrations of persistent organic pollutants in maternal and cord blood from the maternal-infant research on environmental chemicals (MIREC) cohort study. Environ Health 15(1):59.
- Fitz-Simon N, Fletcher T, Luster MI, et al. 2013. Reductions in serum lipids with a 4-year decline in serum perfluorooctanoic acid and perfluorooctanesulfonic acid. Epidemiology 24(4):569-576.
- Fleisch AF, Rifas-Shiman SL, Mora AM, et al. 2017. Early-life exposure to perfluoroalkyl substances and childhood metabolic function. Environ Health Perspect 125(3):481-487. http://doi.org/10.1289/ehp303.
- Florentin A, Deblonde T, Diguio N, et al. 2011. Impacts of two perfluorinated compounds (PFOS and PFOA) on human hepatoma cells: Cytotoxicity but no genotoxicity? Int J Hyg Environ Health 214(6):493-499.
- Food Standards Agency. 2006. FSIS 11/06. Fluorinated chemicals: UK dietary intakes. Food Standards Agency. http://www.food.gov.uk/multimedia/pdfs/fsis1106.pdf. June 28, 2008.
- Foreman JE, Chang SC, Ehresman DJ, et al. 2009. Differential hepatic effects of perfluorobutyrate mediated by mouse and human PPAR-α. Toxicol Sci 110(1):204-211. 10.1093/toxsci/kfp077.
- Forns J, Iszatt N, White RA, et al. 2015. Perfluoroalkyl substances measured in breast milk and child neuropsychological development in a Norwegian birth cohort study. Environ Int 83:176-182.
- Franko J, Meade BJ, Frasch HF, et al. 2012. Dermal penetration potential of perfluorooctanoic acid (PFOA) in human and mouse skin. J Toxicol Environ Health A 75(1):50-62.
- +Frawley RP, Smith M, Cesta MF, et al. 2018. Immunotoxic and hepatotoxic effects of perfluoro-n-decanoic acid (PFDA) on female Harlan Sprague-Dawley rats and B6C3F1/N mice when administered by oral gavage for 28 days. J Immunotoxicol 15(1):41-52. http://doi.org/10.1080/1547691X.2018.1445145.
- Frisbee SJ, Brooks AP, Jr., Maher A, et al. 2009. The C8 health project: Design, methods, and participants. Environ Health Perspect 117(12):1873-1882.
- Frisbee SJ, Shankar A, Knox SS, et al. 2010. Perfluorooctanoic acid, perfluorooctanesulfonate, and serum lipids in children and adolescents: Results from the C8 Health Project. Arch Pediatr Adolesc Med 164(9):860-869.

PERFLUOROALKYLS 780 8. REFERENCES

- Fromme H, Midasch O, Twardella D, et al. 2007a. Occurrence of perfluorinated substances in an adult German population in southern Bavaria. Int Arch Occup Environ Health 80:313-319.
- Fromme H, Mosch C, Morovitz M, et al. 2010. Pre- and postnatal exposure to perfluorinated compounds (PFCs). Environ Sci Technol 44(18):7123-7129.
- Fromme H, Schlummer M, Moller A, et al. 2007b. Exposure of an adult population to perfluorinated substances using duplicate diet portions and biomonitoring data. Environ Sci Technol 41:7928-7933.
- Fromme H, Tittlemier SA, Volkel W, et al. 2009. Perfluorinated compounds-exposure assessment for the general population in western countries. Int J Hyg Environ Health 212(3):239-270.
- Fu J, Gao Y, Wang T, et al. 2015. Elevated levels of perfluoroalkyl acids in family members of occupationally exposed workers: The importance of dust transfer. Sci Rep 5:9313. 10.1038/srep09313.
- Fu Y, Wang T, Fu Q, et al. 2014a. Associations between serum concentrations of perfluoroalkyl acids and serum lipid levels in a Chinese population. Ecotoxicol Environ Saf 106:246-252. 10.1016/j.ecoenv.2014.04.039.
- Fu Y, Wang T, Wang P, et al. 2014b. Effects of age, gender and region on serum concentrations of perfluorinated compounds in general population of Henan, China. Chemosphere 110:104-110. 10.1016/j.chemosphere.2014.02.020.
- +Fuentes S, Colomina MT, Rodriguez J, et al. 2006. Interactions in developmental toxicology: Concurrent exposure to perfluorooctane sulfonate (PFOS) and stress in pregnant mice. Toxicol Lett 164(1):81-89.
- +Fuentes S, Colomina MT, Vicens P, et al. 2007a. Influence of maternal restraint stress on the long-lasting effects induced by prenatal exposure to perfluorooctane sulfonate (PFOS) in mice. Toxicol Lett 171:162-170.
- +Fuentes S, Colomina MT, Vicens P, et al. 2007b. Concurrent exposure to perfluorooctane sulfonate and restraint stress during pregnancy in mice: Effects on postnatal development and behavior of the offspring. Toxicol Sci 98:589-598.
- +Fuentes S, Vicens P, Colomina MT, et al. 2007c. Behavioral effects in adult mice exposed to perfluorooctane sulfonate (PFOS). Toxicology 242:123-129.
- Fujii Y, Harada KH, Koizumi A. 2013. Occurrence of perfluorinated carboxylic acids (PFCAs) in personal care products and compounding agents. Chemosphere 93(3):538-544.
- Fujii Y, Niisoe T, Harada KH, et al. 2015a. Toxicokinetics of perfluoroalkyl carboxylic acids with different carbon chain lengths in mice and humans. J Occup Health 57(1):1-12. 10.1539/joh.14-0136-OA.
- Fujii Y, Niisoe T, Harada KH, et al. 2015b. Supplemental materials: Toxicokinetics of perfluoroalkyl carboxylic acids with different carbon chain lengths in mice and humans. J Occup Health 57(1):1-12
- Fujii Y, Yan J, Harada KH, et al. 2012. Levels and profiles of long-chain perfluorinated carboxylic acids in human breast milk and infant formulas in East Asia. Chemosphere 86(3):315-321.
- Furdui F, Stock N, Ellis DA, et al. 2007. Spatial distribution of perfluoroalkyl contaminants in lake trout from the Great Lakes. Environ Sci Technol 41:1554-1559.
- Gallo V, Leonardi G, Brayne C, et al. 2013. Serum perfluoroalkyl acids concentrations and memory impairment in a large cross-sectional study. BMJ Open 3(6):e002414.
- Gallo V, Leonardi G, Genser B, et al. 2012. Serum perfluorooctanoate (PFOA) and perfluorooctane sulfonate (PFOS) concentrations and liver function biomarkers in a population with elevated PFOA exposure. Environ Health Perspect 120(5):655-660.
- Gannon SA, Johnson T, Nabb DL, et al. 2011. Absorption, distribution, metabolism, and excretion of [1-14C]-perfluorohexanoate ([14C]-PFHx) in rats and mice. Toxicology 283(1):55-62. http://doi.org/10.1016/j.tox.2011.02.004.
- Gao B, He X, Liu W, et al. 2015. Distribution of perfluoroalkyl compounds in rats: Indication for using hair as bioindicator of exposure. J Expo Sci Environ Epidemiol 25(6):632-638.

PERFLUOROALKYLS 781 8. REFERENCES

- Gauthier SA, Mabury SA. 2005. Aqueous photolysis of 8:2 fluorotelomer alcohol. Environ Toxicol Chem 24(8):1837-1846.
- Gawor A, Shunthirasingham C, Hayward SJ, et al. 2014. Neutral polyfluoroalkyl substances in the global atmosphere. Environ Sci Process Impacts 16(3):404-413. http://doi.org/10.1039/c3em00499f.
- Geiger SD, Xiao J, Shankar A. 2014a. No association between perfluoroalkyl chemicals and hypertension in children. Integrated blood pressure control 7:1-7. 10.2147/ibpc.s47660.
- Geiger SD, Xiao J, Ducatman A, et al. 2014b. The association between PFOA, PFOS and serum lipid levels in adolescents. Chemosphere 98:78-83. 10.1016/j.chemosphere.2013.10.005.
- Geiger SD, Xiao J, Shankar A. 2013. Positive association between perfluoroalkyl chemicals and hyperuricemia in children. Am J Epidemiol 177(11):1255-1262.
- Gellrich V, Brunn H, Stahl T. 2013. Perfluoroalkyl and polyfluoroalkyl substances (PFASs) in mineral water and tap water. J Environ Sci Health A Tox Hazard Subst Environ Eng 48(2):129-135. 10.1080/10934529.2013.719431.
- Genuis SJ, Beesoon S, Birkholz D. 2013. Biomonitoring and elimination of perfluorinated compounds and polychlorinated biphenyls through perspiration: Blood, urine, and sweat study. ISRN toxicology 2013:483832.
- George ME, Andersen ME. 1986. Toxic effects of nonadecafluoro-n-decanoic acid in rats. Toxicol Appl Pharmacol 85:169-180.
- Gewurtz SB, Bhavsar SP, Crozier PW, et al. 2009. Perfluoroalkyl contaminants in window film: Indoor/outdoor, urban/rural, and winter/summer contamination and assessment of carpet as a possible source. Environ Sci Technol 43(19):7317-7323.
- Gewurtz SB, Bhavsar SP, Petro S, et al. 2014. High levels of perfluoroalkyl acids in sport fish species downstream of a firefighting training facility at Hamilton International Airport, Ontario, Canada. Environ Int 67:1-11. 10.1016/j.envint.2014.02.005.
- Giesy JP, Kannan K. 2001. Global distribution of perfluorooctane sulfonate in wildlife. Environ Sci Technol 35(7):1339-1342.
- Gilliland FD. 1992. Fluorocarbons and human health: Studies in an occupational cohort: A thesis. University of Minnesota, 29-229.
- Gilliland FD, Mandel JS. 1993. Mortality among employees of a perfluorooctanoic acid production plant. J Occup Med 35(9):950-954.
- Gilliland FD, Mandel JS. 1996. Serum perfluorooctanoic acid and hepatic enzymes, lipoproteins, and cholesterol: A study of occupationally exposed men. Am J Ind Med 29(5):560-568.
- Gleason JA, Post GB, Fagliano JA. 2015. Associations of perfluorinated chemical serum concentrations and biomarkers of liver function and uric acid in the US population (NHANES), 2007-2010. Environ Res 136:8-14. 10.1016/j.envres.2014.10.004.
- Glynn A, Berger U, Bignert A, et al. 2012. Perfluorinated alkyl acids in blood serum from primiparous women in Sweden: Serial sampling during pregnancy and nursing, and temporal trends 1996-2010. Environ Sci Technol 46:9071-9079.
- Goecke CM, Jarnot BM, Reo NV. 1992. A comparative toxicological investigation of perfluorocarboxylic acids in rats by fluorine-19 NMR spectroscopy. Chem Res Toxicol 5(4):512-519.
- Goecke-Flora CM, Reo NV. 1996. Influence of carbon chain length on the hepatic effects of perfluorinated fatty acids. A 19F- and 31P-NMR investigation. Chem Res Toxicol 9(4):689-695.
- Gomis MI, Vestergren R, Borg D, et al. 2018. Comparing the toxic potency *in vivo* of long-chain perfluoroalkyl acids and fluorinated alternatives. Environ Int 113:1-9. http://doi.org/10.1016/j.envint.2018.01.011.
- Gomis MI, Vestergren R, Nilsson H, et al. 2016. Contribution of direct and indirect exposure to human serum concentrations of perfluorooctanoic acid in an occupationally exposed group of ski waxers. Environ Sci Technol 50(13):7037-7046. http://doi.org/10.1021/acs.est.6b01477.

PERFLUOROALKYLS 782 8. REFERENCES

- Gomis MI, Wang Z, Scheringer M, et al. 2015. A modeling assessment of the physicochemical properties and environmental fate of emerging and novel per- and polyfluoroalkyl substances. Sci Total Environ 505:981-991. http://doi.org/10.1016/j.scitotenv.2014.10.062.
- +Gortner EG, Lamprecht EG, Case MT. 1982. Oral teratology study of T-3141CoC in rabbits. St. Paul, MN: Riker Laboratories, Inc.
- Goss KU. 2008. The pKa values of PFOA and other highly fluorinated carboxylic acids. Environ Sci Technol 42(2):456-458. http://www.ncbi.nlm.nih.gov/pubmed/18284146.
- Gotoh Y, Kato Y, Stieger B, et al. 2002. Gender difference in the Oatp1-mediated tubular reabsorption of estradiol 17β-D-glucuronide in rats. Am J Physiol Endocrinol Metab 282:E1245-E1254.
- Goudarzi H, Miyashita C, Okada E, et al. 2016a. Effects of prenatal exposure to perfluoroalkyl acids on prevalence of allergic diseases among 4-year-old children. Environ Int 94:124-132. http://doi.org/10.1016/j.envint.2016.05.020.
- Goudarzi H, Miyashita C, Okada E, et al. 2017. Prenatal exposure to perfluoroalkyl acids and prevalence of infectious diseases up to 4years of age. Environ Int 104:132-138. http://doi.org/10.1016/j.envint.2017.01.024.
- Goudarzi H, Nakajima S, Ikeno T, et al. 2016b. Prenatal exposure to perfluorinated chemicals and neurodevelopment in early infancy: The Hokkaido Study. Sci Total Environ 541:1002-1010. 10.1016/j.scitotenv.2015.10.017.
- +Goulding DR, White SS, McBride SJ, et al. 2017. Gestational exposure to perfluorooctanoic acid (PFOA): Alterations in motor related behaviors. Neurotoxicology 58:110-119. http://doi.org/10.1016/j.neuro.2016.11.008.
- Govarts E, Iszatt N, Trnovec T, et al. 2018. Prenatal exposure to endocrine disrupting chemicals and risk of being born small for gestational age: Pooled analysis of seven European birth cohorts. Environ Int 115:267-278. http://doi.org/10/1016/jenvint.2018.03.017.
- 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) 10.3390/ijerph13050495.
- Grandjean P, Budtz-Jorgensen E. 2013. Immunotoxicity of perfluorinated alkylates: Calculation of benchmark doses based on serum concentrations in children. Environ Health 12(1):35.
- Grandjean P, Andersen EW, Budtz-Jorgensen E, et al. 2012. Serum vaccine antibody concentrations in children exposed to perfluorinated compounds. J Am Med Assoc 307(4):391-397.
- Grandjean P, Heilmann C, Weihe P, et al. 2017. Serum vaccine antibody concentrations in adolescents exposed to perfluorinated compounds. Environ Health Perspect. 125(7):077018. 10.1289/EHP275.
- Granum B, Haug LS, Namork E, et al. 2013. Pre-natal exposure to perfluoroalkyl substances may be associated with altered vaccine antibody levels and immune-related health outcomes in early childhood. J Immunotoxicol 10(4):373-379.
- +Grasty RC, Bjork JA, Wallace KB, et al. 2005. Effects of prenatal perfluorooctane sulfonate (PFOS) exposure on lung maturation in the perinatal rat. Birth Defects Res B Dev Reprod Toxicol 74:405-416.
- +Grasty RC, Wolf DC, Grey BE, et al. 2003. Prenatal window of susceptibility to perfluorooctane sulfonate-induced neonatal mortality in the Sprague-Dawley rat (corrigendum in Birth Defects Res B 77(1):86). Birth Defects Res B 68(6):465-471.
- Grice MM, Alexander BH, Hoffbeck R, et al. 2007. Self-reported medical conditions in perfluorooctanesulfonyl fluoride manufacturing workers. J Occup Environ Med 49(7):722-729.
- +Griffith FD, Long JE. 1980. Animal toxicity studies with ammonium perfluorooctanoate. Am Ind Hyg Assoc J 41(8):576-583.
- Guerranti C, Perra G, Corsolini S, et al. 2013. Pilot study on levels of perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) in selected foodstuffs and human milk from Italy. Food Chem 140:197-203.
- Gump BB, Wu Q, Dumas AK, et al. 2011. Perfluorochemical (PFC) exposure in children: Associations with impaired response inhibition. Environ Sci Technol 45(19):8151-8159.

PERFLUOROALKYLS 783 8. REFERENCES

- Guo R, Sim WJ, Lee ES, et al. 2010. Evaluation of the fate of perfluoroalkyl compounds in wastewater treatment plants. Water Res 44(11):3476-3486. 10.1016/j.watres.2010.03.028.
- +Guruge KS, Hikono H, Shimada N, et al. 2009. Effect of perfluorooctane sulfonate (PFOS) on influenza A virus-induced mortality in female B6C3F1 mice. J Toxicol Sci 34(6):687-691.
- Guruge KS, Yeung LW, Yamanaka N, et al. 2006. Gene expression profiles in rat liver treated with perfluorooctanoic acid (PFOA). Toxicol Sci 89(1):93-107.
- Gützkow KB, Haug LS, Thomsen C, et al. 2012. Placental transfer of perfluorinated compounds is selective. A Norwegian mother and child sub-cohort study. Int J Hyg Environ Health 215(2):216-219
- +Hadrup N, Pedersen M, Skov K, et al. 2016. Perfluorononanoic acid in combination with 14 chemicals exerts low-dose mixture effects in rats. Arch Toxicol 90(3):661-675. 10.1007/s00204-015-1452-6.
- HAES. 2017. GEF-Reduction and phase-out of PFOS in priority sectors in China. Environmental & Social Management Framework. Hubei Academy of Environmental Sciences, Foreign Economic Cooperation Office, Ministry of Environmental Protection (FECO). http://documents.worldbank.org/curated/en/2752514607008/Environmental-and-social-management-framework. February 28, 2017.
- Hall AP, Elcombe CR, Foster JR, et al. 2012. Liver hypertrophy: A review of adaptive (adverse and non-adverse) changes- conclusions from the 3rd International ESTP Expert Workshop. Toxicol Pathol 40:971-994.
- Halldorsson TI, Rytter D, Haug LS, et al. 2012. Prenatal exposure to perfluorooctanoate and risk of overweight at 20 years of age: A prospective cohort study. Environ Health Perspect 120(5):668-673.
- +Hallgren S, Fredriksson A, Viberg H. 2015. More signs of neurotoxicity of surfactants and flame retardants neonatal PFOS and PBDE 99 cause transcriptional alterations in cholinergic genes in the mouse CNS. Environ Toxicol Pharmacol 40(2):409-416. 10.1016/j.etap.2015.06.014.
- Hamm MP, Cherry NM, Chan E, et al. 2010. Maternal exposure to perfluorinated acids and fetal growth. J Expo Sci Environ Epidemiol 20(7):589-597.
- Hamm MP, Martin JW, Chan E, et al. 2009. Maternal exposure to perfluorinated acids and fetal growth restriction. Am J Epidemiol 169(Suppl. 11):S43.
- Han W, Gao Y, Yao Q, et al. 2018. Perfluoroalkyl and polyfluoroalkyl substances in matched parental and cord serum in Shandong, China. Environ Int 116:206-213. http://doi.org/10.1016/j.envint.2018.04.025.
- Han X, Hinderliter PM, Snow TA, et al. 2004. Binding of perfluorooctanoic acid to rat liver-form and kidney-form α2u-globulins. Drug Chem Toxicol 27(4):341-360.
- Han X, Kemper RA, Jepson GW. 2005. Subcellular distribution and protein binding of perfluorooctanoic acid in rat liver and kidney. Drug Chem Toxicol 28(2):197-209.
- Han X, Snow TA, Kemper RA, et al. 2003. Binding of perfluorooctanoic acid to rat and human plasma proteins. Chem Res Toxicol 16:775-781.
- Hanhijarvi H, Ophaug RH, Singer L. 1982. The sex-related difference in perfluorooctanoate excretion in the rat. Proc Soc Exp Biol Med 171:50-55.
- Hanhijarvi H, Ylinen M, Kojo A, et al. 1987. Elimination and toxicity of perfluorooctanoic acid during subchronic administration in the Wistar rat. Pharmacol Toxicol 61(1):66-68.
- Hansen KJ, Johnson HO, Eldridge JS, et al. 2002. Quantitative characterization of trace levels of PFOS and PFOA in the Tennessee River. Environ Sci Technol 36:1681-1685.
- Hanssen L, Dudarev AA, Huber S, et al. 2013. Partition of perfluoroalkyl substances (PFASs) in whole blood and plasma, assessed in maternal and umbilical cord samples from inhabitants of arctic Russia and Uzbekistan. Sci Total Environ 447:430-437.
- Hanssen L, Rollin H, Odland JO, et al. 2010. Perfluorinated compounds in maternal serum and cord blood from selected areas of South Africa: Results of a pilot study. J Environ Monit 12(6):1355-1361.

PERFLUOROALKYLS 784 8. REFERENCES

- Harada K, Inoue K, Morikawa A, et al. 2005a. Renal clearance of perfluorooctane sulfonate and perfluorooctanoate in humans and their species-specific excretion. Environ Res 99:253-261.
- Harada K, Nakanishi S, Saito N, et al. 2005b. Airborne perfluorooctanoate may be a substantial source contamination in Kyoto area, Japan. Bull Environ Contam Toxicol 74:64-69.
- Harada K, Nakanishi S, Sasaki K, et al. 2006. Particle size distribution and respiratory deposition estimates of airborne perfluorooctanoate and perfluorooctanesulfonate in Kyoto area, Japan. Bull Environ Contam Toxicol 76(2):306-310.
- Harada KH, Koizumi A. 2009. Environmental and biological monitoring of persistent fluorinated compounds in Japan and their toxicities. Environ Health Prev Med 14(1):7-19.
- Harada KH, Hashida S, Kaneko T, et al. 2007. Biliary excretion and cerebrospinal fluid partition of perfluorooctanoate and perfluorooctane sulfonate in humans. Environ Toxicol Pharmacol 24(2):134-139.
- Hardell E, Karrman A, van Bavel B, et al. 2014. Case-control study on perfluorinated alkyl acids (PFAAs) and the risk of prostate cancer. Environ Int 63:35-39.
- Hardisty JF, Willson GA, Brown WR, et al. 2010. Pathology Working Group review and evaluation of proliferative lesions of mammary gland tissues in female rats fed ammonium perfluorooctanoate (APFO) in the diet for 2 years. Drug Chem Toxicol 33(2):131-137.
- Harris LA, Barton HA. 2008. Comparing single and repeated dosimetry data for perfluorooctane sulfonate in rats. Toxicol Lett 181(3):148-156.
- Harris MH, Rifas-Shiman SL, Calafat AM, et al. 2017. Predictors of per- and polyfluoroalkyl substance (PFAS) plasma concentrations in 6-10 year old American children. Environ Sci Technol 51(9):5193-5204. http://doi.org/10.1021/acs.est.6b05811.
- +Harris MW, Birnbaum LS. 1989. Developmental toxicity of perfluorodecanoic acid in C57BL/6N mice. Fundam Appl Toxicol 12:442-448.
- +Harris MW, Uraih LC, Birnbaum LS. 1989. Acute toxicity of perfluorodecanoic acid in C57BL/6 mice differs from 2,3,7,8-tetrachlorodibenzo-p-dioxin. Fundam Appl Toxicol 13:723-726.
- Hartman TJ, Calafat AM, Holmes AK, et al. 2017. Prenatal exposure to perfluoroalkyl substances and body fatness in girls. Childhood obesity (Print) 13(3):222-230. http://doi.org/10.1089/chi.2016.0126.
- +Haughom B, Spydevold O. 1992. The mechanism underlying the hypolipemic effect of perfluorooctanoic acid (PFOA), perfluorooctane sulphonic acid (PFOSA) and clofibric acid. Biochim Biophys Acta 1128(1):65-72.
- He X, Liu Y, Xu B, et al. 2018. PFOA is associated with diabetes and metabolic alteration in US men: National Health and Nutrition Examination Survey 2003-2012. Sci Total Environ 625:566-574. http://doi.org/10.1016/jscutitebv,2917.12.186.
- Heilmann C, Budtz-Jorgensen E, Nielsen F, et al. 2010. Serum concentrations of antibodies against vaccine toxoids in children exposed perinatally to immunotoxicants. Environ Health Perspect 118(10):1434-1438. 10.1289/ehp.1001975.
- Hekster FM, Laane RW, de Voogt P. 2003. Environmental and toxicity effects of perfluoroalkylated substances. Rev Environ Contam Toxicol 179:99-121.
- Henderson WM, Smith MA. 2007. Perfluorooctanoic acid and perfluorononanoic acid in fetal and neonatal mice following *in utero* exposure to 8-2 fluorotelomer alcohol. Toxicol Sci 95(2):452-461.
- Herrick RL, Buckholz J, Biro FM, et al. 2017. Polyfluoroalkyl substance exposure in the Mid-Ohio River Valley, 1991-2012. Environ Pollut 228:50-60. http://doi.org/10.1016/j.envpol.2017.04.092.
- Higgins CP, Luthy RG. 2006. Sorption of perfluorinated surfactants on sediments. Environ Sci Technol 40:7251-7256.
- Hinderliter PM, DeLorme MP, Kennedy GL. 2006a. Perfluorooctanoic acid: Relationship between repeated inhalation exposures and plasma PFOA concentration in the rat. Toxicology 222:80-85.
- Hinderliter PM, Han X, Kennedy GL, et al. 2006b. Age effect on perfluorooctanoate (PFOA) plasma concentration in post-weaning rats following oral gavage with ammonium perfluorooctanoate (APFO). Toxicology 225:195-203.

PERFLUOROALKYLS 785 8. REFERENCES

- Hinderliter PM, Mylchreest E, Gannon SA, et al. 2005. Perfluorooctanoate: Placental and lactational transport pharmacokinetics in rats. Toxicology 211:139-148.
- +Hines EP, White SS, Stanko JP, et al. 2009. Phenotypic dichotomy following developmental exposure to perfluorooctanoic acid (PFOA) in female CD-1 mice: Low doses induce elevated serum leptin and insulin, and overweight in mid-life. Mol Cell Endocrinol 304(1-2):97-105.
- +Hoberman AM, York RG. 2003. Oral (gavage) combined repeated dose toxicity study of T-7706 with the reproduction/developmental toxicity screening test. Argus Research.
- Hoffman K, Webster TF, Bartell SM, et al. 2011. Private drinking water wells as a source of exposure to perfluorooctanoic acid (PFOA) in communities surrounding a fluoropolymer production facility. Environ Health Perspect 119(1):92-97.
- Hoffman K, Webster TF, Weisskopf MG, et al. 2010. Exposure to polyfluoroalkyl chemicals and attention deficit/hyperactivity disorder in U.S. children 12-15 years of age. Environ Health Perspect 118(12):1762-1767.
- Hölzer J, Midasch O, Rauchfuss K, et al. 2008. Biomonitoring of perfluorinated compounds in children and adults exposed to perfluorooctanoate-contaminated drinking water. Environ Health Perspect 116(5):651-657.
- Houde M, Bujas TD, Small J, et al. 2006a. Biomagnification of perfluoroalkyl compounds in the bottlenose dolphin (*Tursiops truncatus*) food web. Environ Sci Technol 40:4138-4144.
- Houde M, Martin JW, Letcher RJ, et al. 2006b. Biological monitoring of polyfluoroalkyl substances: A Review. Environ Sci Technol 40(11):3463-3473.
- Houde M, Wells RS, Fair PA, et al. 2005. Polyfluoroalkyl compounds in free-ranging bottlenose dolphins (*Tursiops truncatus*) from the Gulf of Mexico and the Atlantic Ocean. Environ Sci Technol 39:6591-6598.
- Houtz EF, Sutton R, Park JS, et al. 2016. Poly- and perfluoroalkyl substances in wastewater: Significance of unknown precursors, manufacturing shifts, and likely AFFF impacts. Water Res 95:142-149. http://doi.org/10.1016/j.watres.2016.02.055.
- Høyer BB, Ramlau-Hansen CH, Obel C, et al. 2015a. Pregnancy serum concentrations of perfluorinated alkyl substances and offspring behaviour and motor development at age 5-9 years--a prospective study. Environ Health 14:2. 10.1186/1476-069x-14-2.
- Høyer BB, Ramlau-Hansen CH, Vrijheid M, et al. 2015b. Anthropometry in 5- to 9-year-old Greenlandic and Ukrainian children in relation to prenatal exposure to perfluorinated alkyl substances. Environ Health Perspect 123(8):841-846. 10.1289/ehp.1408881.
- HSDB. 2019. Perfluoroheptanoic acid. Hazardous Substances Data Bank. National Library of Medicine. http://toxnet.nlm.nih.gov. March 5, 2019.
- Hsu V, de LTVM, Zhao P, et al. 2014. Towards quantitation of the effects of renal impairment and probenecid inhibition on kidney uptake and efflux transporters, using physiologically based pharmacokinetic modelling and simulations. Clin Pharmacokinet 53(3):283-293. 10.1007/s40262-013-0117-y.
- +Hu Q, Strynar MJ, DeWitt JC. 2010. Are developmentally exposed C57BL/6 mice insensitive to suppression of TDAR by PFOA? J Immunotoxicol 7(4):344-349.
- Hu W, Jones PD, Upham BL, et al. 2002. Inhibition of gap junctional intercellular communication by perfluorinated compounds in rat liver and dolphin kidney epithelial cell lines *in vitro* and Sprague-Dawley rats *in vivo*. Toxicol Sci 68(2):429-426.
- Hu XC, Andrews DQ, Lindstrom M, et al. 2016. Detection of poly-and perfluoroalkyl substances (PFASs) in U.S. drinking water linked to industrial sites, military fire training areas and wastewater treatment plants. Environ Sci Technol Lett 3:344-350. DOI: 10.1021/acs.estlett.6b00260.
- Huang M, Jiao J, Zhuang P, et al. 2018. Serum polyfluoroalkyl chemicals are associated with risk of cardiovascular diseases in national US population. Environ Int 119:37-46. http://doi.org/10.1016/j.envint.2018.05.051.
- Humblet O, Dias-Ramirez LG, Balmes JR, et al. 2014. Perfluoroalkyl chemicals and asthma among children 12-19 years of age: NHANES (1999-2008). Environ Health Perspect 122(10):1129-1133.

PERFLUOROALKYLS 786 8. REFERENCES

- Hundley SG, Sarrif AM, Kennedy GL. 2006. Absorption, distribution, and excretion of ammonium perfluorooctanoate (APFO) after oral administration to various species. Drug Chem Toxicol 29(2):137-145.
- Hurley MD, Andersen MPS, Wallington TJ, et al. 2004. Atmospheric chemistry of perfluorinated carboxylic acids: Reaction with OH radicals and atmospheric lifetimes. J Phys Chem 108:615-620.
- IARC. 2017. Perfluorooctanoic acid (PFOA). IARC Monographs on the evaluation of carcinogenic risks to humans. Volume 110. Some chemicals used as solvents and in polymer manufacture. Lyon, France: International Agency for Research on Cancer. https://monographs.iarc.fr/wp-content/uploads/2018/06/mono110-01.pdf. November 27, 2018.
- ICRP. 1981. Report of the task group on reference man. ICRP Publication 28. International Commission on Radiological Protection. Oxford: Pergamon Press, 32-40.
- Igari Y, Sugiyama Y, Sawada Y, et al. 1983. Prediction of diazepam disposition in the rat and man by a physiologically based pharmacokinetic model. J Pharmacokinet Biopharm 11(6):577-593. http://www.ncbi.nlm.nih.gov/pubmed/6678311.
- +Ikeda T, Aiba K, Fukuda K, et al. 1985. The induction of peroxisome proliferation in rat liver by perfluorinated fatty acids, metabolically inert derivatives of fatty acids. J Biochem (Tokyo)98:475-482.
- Impinen A, Nygaard UC, Lodrup Carlsen KC, et al. 2018. Prenatal exposure to perfluoroalkyl substances (PFASs) associated with respiratory tract infections but not allergy- and asthma-related health outcomes in childhood. Environ Res 160:518-523. http://doi.org/10.1016/j.envres.2017.10.012.
- Innes KE, Ducatman AM, Luster MI, et al. 2011. Association of osteoarthritis with serum levels of the environmental contaminants perfluorooctanoate and perfluorooctane sulfonate in a large Appalachian population. Am J Epidemiol 174(4):440-450.
- Innes KE, Wimsatt JH, Frisbee S, et al. 2014. Inverse association of colorectal cancer prevalence to serum levels of perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) in a large Appalachian population. BMC Cancer [electronic resource]. http://www.bilomedcentral.com/1471/14/45. December 10, 2011.
- Inoue K, Okada F, Ito R, et al. 2004. Perfluorooctane sulfonate (PFOS) and related perfluorinated compounds in human maternal and cord blood samples: Assessment of PFOS exposure in a susceptible population during pregnancy. Environ Health Perspect 112:1204-1207.
- Inoue Y, Hashizume N, Yakata N, et al. 2012. Unique physicochemical properties of perfluorinated compounds and their bioconcentration in common carp *Cyprinus carpio L*. Arch Environ Contam Toxicol 62(4):672-680. http://doi.org/10.1007/s00244-011-9730-7.
- IRIS. 2018. Integrated Risk Information System. Washington, DC: U.S. Environmental Protection Agency. https://cfpub.epa.gov/ncea/iris_drafts/simple_list.cfm. July 25, 2018.
- Issemann I, Green S. 1990. Activation of a member of a steroid hormone receptor superfamily by peroxisome proliferators. Nature 347:645-650.
- Itoh S, Araki A, Mitsui T, et al. 2016. Association of perfluoroalkyl substances exposure *in utero* with reproductive hormone levels in cord blood in the Hokkaido Study on Environment and Children's Health. Environ Int 94:51-59. 10.1016/j.envint.2016.05.011.
- ITRC. 2017. Naming conventions and physical and chemical properties of per- and polyfluoroalkyl substances (PFAS). Washington, DC: U.S. Environmental Protection Agency. https://pfas-1.itrcweb.org/wp-content/uploads/2017/10/pfas_fact_sheet_naming_conventions_11_13_17.pdf.
- Iwabuchi K, Senzaki N, Mazawa D, et al. 2017. Tissue toxicokinetics of perfluoro compounds with single and chronic low doses in male rats. J Toxicol Sci 42(3):301-317. http://doi.org/10.2131/jts.42.301.
- Iwai H. 2011. Toxicokinetics of ammonium perfluorohexanoate. Drug Chem Toxicol 34(4):341-346. http://doi.org/10.3109/01480545.2011.585162.

PERFLUOROALKYLS 787 8. REFERENCES

- +Iwai H, Hoberman AM. 2014. Oral (gavage) combined developmental and perinatal/postnatal reproduction toxicity study of ammonium salt of perfluorinated hexanoic acid in mice. Int J Toxicol 33(3):219-237.
- +Iwai H, Yamashita K. 2006. A fourteen-day repeated dose oral toxicity study of APFO in rats. Drug Chem Toxicol 29:323-332.
- Jacquet N, Maire MA, Landkocz Y, et al. 2012. Carcinogenic potency of perfluorooctane sulfonate (PFOS) on Syrian hamster embryo (SHE) cells. Arch Toxicol 86(2):305-314.
- Jahnke A, Berger U, Ebinghaus R, et al. 2007a. Latitudinal gradient of airborne polyfluorinated alkyl substances in the marine atmosphere between Germany and South Africa (53° N-33° S). Environ Sci Technol 41(9):3055-3061.
- Jahnke A, Huber S, Temme C, et al. 2007b. Development and application of a simplified sampling method for volatile polyfluorinated alkyl substances in indoor and environmental air. J Chromatogr A1164:1-9.
- Jain RB. 2013. Association between thyroid profile and perfluoroalkyl acids: Data from NHNAES 2007-2008. Environ Res 126:51-59. 10.1016/j.envres.2013.08.006.
- Jain RB. 2015. Estimation of the total concentration of perfluoroalkyl acids (PFAA) in human serum: Data from NHANES 2005-2012. Chemosphere 134:387-394. 10.1016/j.chemosphere.2015.04.104.
- Jandacek RJ, Rider T, Keller ER, et al. 2010. The effect of olestra on the absorption, excretion and storage of 2,2',5,5' tetrachlorobiphenyl; 3,3',4,4' tetrachlorobiphenyl; and perfluorooctanoic acid. Environ Int 36(8):880-883.
- Jeddy Z, Hartman TJ, Taylor EV, et al. 2017. Prenatal concentrations of perfluoroalkyl substances and early communication development in British girls. Early Hum Dev 109:15-20. http://doi.org/10.1016/j.earlhumdev.2017.04.004.
- Jensen MS, Norgaard-Pedersen B, Toft G, et al. 2012. Phthalates and perfluorooctanesulfonic acid in human amniotic fluid: Temporal trends and timing of amniocentesis in pregnancy. Environ Health Perspect 120(6):897-903.
- Jensen RC, Glintborg D, Gade Timmermann CA, et al. 2018. Perfluoroalkyl substances and glycemic status in pregnant Danish women: The Odense Child Cohort. Environ Int 116:101-107. http://doi.org/10.1016/j.envint.2018.04.010.
- Jensen TK, Andersen LB, Kyhl HB, et al. 2015. Association between perfluorinated compound exposure and miscarriage in Danish pregnant women. PLoS ONE 10(4):e0123496. 10.1371/journal.pone.0123496.
- Ji K, Kim S, Kho Y, et al. 2012. Serum concentrations of major perfluorinated compounds among the general population in Korea: Dietary sources and potential impact on thyroid hormones. Environ Int 45:78-85.
- Jiang Q, Lust RM, Dewitt JC. 2013. Perfluorooctanoic acid induced-developmental cardiotoxicity: Are peroxisome proliferator activated receptor α (PPAR α) and bone morphorgenic protein 2 (BMP2) pathways involved? J Toxicol Environ Health A 76(11):635-650. 10.1080/15287394.2013.789415.
- Jiang Q, Lust RM, Strynar MJ, et al. 2012. Perfl[o]urooctanoic acid induces developmental cardiotoxicity in chicken embryos and hatchlings. Toxicology 293(1-3):97-106. 10.1016/j.tox.2012.01.005.
- Jiang Q, Ma W, Wu J, et al. 2016. Perfluorooctanoic acid-induced toxicity in primary cultures of chicken embryo cardiomyocytes. Environ Toxicol 31(11):1580-1590. 10.1002/tox.22162. http://dx.doi.org/10.1002/tox.22162.
- Jin C, Sun Y, Islam A, et al. 2011. Perfluoroalkyl acids including perfluorooctane sulfonate and perfluorohexane sulfonate in firefighters. J Occup Environ Med 53(3):324-328. 10.1097/JOM.0b013e31820d1314.
- Jin H, Zhang Y, Jiang W, et al. 2016. Isomer-specific distribution of perfluoroalkyl substances in blood. Environ Sci Technol 50(14):7808-7815. http://doi.org/10.1021/acs.est.6b01698.
- Jin YH, Liu W, Sato I, et al. 2009. PFOS and PFOA in environmental and tap water in China. Chemosphere 77(5):605-611.

PERFLUOROALKYLS 788 8. REFERENCES

- Joensen UN, Bossi R, Leffers H, et al. 2009. Do perfluoroalkyl compounds impair human semen quality? Environ Health Perspect 117(6):923-927.
- Joensen UN, Veyrand B, Antignac JP, et al. 2013. PFOS (perfluorooctanesulfonate) in serum is negatively associated with testosterone levels, but not with semen quality, in healthy men. Hum Reprod 28(3):599-608.
- Jogsten IE, Perello G, Llebaria X, et al. 2009. Exposure to perfluorinated compounds in Catalonia, Spain, through consumption of various raw and cooked foodstuffs, including packaged food. Food Chem Toxicol 47:1577-1583.
- Johansson JH, Berger U, Vestergren R, et al. 2014. Temporal trends (1999-2010) of perfluoroalkyl acids in commonly consumed food items. Environ Pollut 188:102-108. 10.1016/j.envpol.2014.01.026.
- Johansson N, Eriksson P, Viberg H. 2009. Neonatal exposure to PFOS and PFOA in mice results in changes in proteins which are important for neuronal growth and synaptogenesis in the developing brain. Toxicol Sci 108(2):412-418.
- +Johansson N, Fredriksson A, Eriksson P. 2008. Neonatal exposure to perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) causes neurobehavioural defects in adult mice. Neurotoxicology 29:160-169.
- Johnson JD. 1995a. Final report. Analytical study, single-dose dermal absorption/toxicity study of T6049 in rabbits. *In vivo* reference number: HWI#6329-130. 3M. SCD Division.
- Johnson JD. 1995b. Final report. Analytical study, single-dose dermal absorption/toxicity study of T6053 in rabbits (lithium perfluorooctane sulfonate). *In vivo* study reference number: HWI#6329-137. 3M. SCD Division.
- Johnson JD, Ober RE. 1979. Absorption of FC-95-¹⁴C in rats after a single oral dose. 3M. Submitted to the U.S. Environmental Protection Agency's Administrative Record. AR226-0007.
- Johnson JD, Ober RE. 1980. Extent and route of excretion and tissue distribution of total carbon-14 in rats after a single intravenous dose of FC-95-¹⁴C. 3M. Submitted to the U.S. Environmental Protection Agency's Administrative Record. AR226-0006.
- Johnson JD, Ober RE. 1999a. Absorption of FC-143-¹⁴C in rats after a single oral dose. In: Exploratory 28-day oral toxicity study with telomer alcohol, telomer acrylate, PFHS, and PFOS (POS control) by daily gavage in the rat, w/CVR LTR DTD, 051500 (Sanitized). 3M. Submitted to the U.S. Environmental Protection Agency under TSCA Section FYI. OTS05001378S.
- Johnson JD, Ober RE. 1999b. Extent and route of excretion and tissue distribution of total carbon-14 in male and female rats after a single IV dose of FC-143-¹⁴C. In: Exploratory 28-day oral toxicity study with telomer alcohol, telomer acrylate, PFHS, and PFOS (POS control) by daily gavage in the rat, w/CVR letter dated, 051500 (Sanitized). 3M. Submitted to the U.S. Environmental Protection Agency under TSCA Section FYI. OTS05001378S.
- Johnson JD, Gibson SJ, Ober RE. 1984. Cholestyramine-enhanced fecal elimination of carbon-14 in rats after administration of ammonium [¹⁴C] perfluorooctanoate or potassium [¹⁴C] perfluorooctane-sulfonate. Fundam Appl Toxicol 4:972-976.
- Johnson PI, Sutton P, Atchley DS, et al. 2014. The Navigation Guide—evidence-based medicine meets environmental health: Systematic review of human evidence for PFOA effects on fetal growth. Environ Health Perspect 122:1028-1039.
- Jones CM. 2016. 2010/1015 PFOA Stewardship Program. Docket ID number EPA-HQ-OPPT-2006-0621. https://www.regulations.gov/document?D=EPA-HQ-OPPT-2006-0621-0115. February 28, 2017.
- Jørgensen KT, Specht IO, Lenters V, et al. 2014a. Perfluoroalkyl substances and time to pregnancy in couples from Greenland, Poland and Ukraine. Environ Health 13:116. 10.1186/1476-069x-13-116.
- Jørgensen KT, Specht IO, Lenters V, et al. 2014b. Supplemental files to "Perfluoroalkyl substances and time to pregnancy in couples from Greenland, Poland and Ukraine" [Environ Health 13:116. 10.1186/1476-069x-13-116]. Environ Health 10.1186/1476-069x-13-116.
- Jurado-Sanchez B, Ballesteros E, Gallego M. 2014. Analytical method for biomonitoring of perfluoroalkyl acids in human urine. Talanta 128:141-146. 10.1016/j.talanta.2014.04.071.

PERFLUOROALKYLS 789 8. REFERENCES

- Kabore HA, Vo Duy S, Munoz G, et al. 2018. Worldwide drinking water occurrence and levels of newly-identified perfluoroalkyl and polyfluoroalkyl substances. Sci Total Environ 616-617:1089-1100. http://doi.org/10.1016/j.scitotenv.2017.10.210.
- Kaiser MA, Larsen BS, Kao CPC, et al. 2005. Vapor pressures of perfluoro-octanoic, -nonanoic, -decanoic, -undecanoic, and -dodecanoic acids. J Chem Eng Data 50:1841-1843.
- Kang H, Choi K, Lee HS, et al. 2016. Elevated levels of short carbon-chain PFCAs in breast milk among Korean women: Current status and potential challenges. Environ Res 148:351-359.
- Kang H, Lee H, Moon HB, et al. 2018. Perfluoroalkyl acids in serum of Korean children: Occurrences, related sources, and associated health outcomes. Sci Total Environ 645:958-965. http://doi.org/10.1016/j.scitotenv.2018.07.177.
- Kannan K, Choi JW, Iseki Net al. 2002a. Concentrations of perfluorinated acids in livers of birds from Japan and Korea. Chemosphere 49(3):225-231.
- Kannan K, Corsolini S, Falandysz J, et al. 2002b. Perfluorooctanesulfonate and related fluorinated hydrocarbons in marine mammals, fishes, and birds from coasts of the Baltic and the Mediterranean Seas. Environ Sci Technol 36(15):3210-3216.
- Kannan K, Franson JC, Bowerman WW, et al. 2001a. Perfluorooctane sulfonate in fish-eating water birds including bald eagles and albatrosses. Environ Sci Technol 35(15):3065-3070.
- Kannan K, Hansen KJ, Wade TL, et al. 2002c. Perfluorooctane sulfonate in oysters, *Crassostrea virginica*, from the Gulf of Mexico and the Chesapeake Bay, USA. Arch Environ Contam Toxicol 42(3):313-318.
- Kannan K, Koistinen J, Beckmen K, et al. 2001b. Accumulation of perfluorooctane sulfonate in marine mammals. Environ Sci Technol 35:1593-1598.
- Kannan K, Newsted J, Halbrook RS, et al. 2002d. Perfluorooctanesulfonate and related fluorinated hydrocarbons in mink and river otters from the United States. Environ Sci Technol 36:2566-2571.
- Kannan K, Perrotta E, Thomas NJ. 2006. Association between perfluorinated compounds and pathological conditions in southern sea otters. Environ Sci Technol 40:4943-4948.
- Kannan K, Tao L, Sinclair E, et al. 2005. Perfluorinated compounds in aquatic organisms at various trophic levels in a Great Lakes food chain. Arch Environ Contam Toxicol 48:559-566.
- Karlsen M, Grandjean P, Weihe P, et al. 2017. Early-life exposures to persistent organic pollutants in relation to overweight in preschool children. Reprod Toxicol 68:145-153. http://doi.org/10.1016/j.reprotox.2016.08.002.
- Karnes C, Winquist A, Steenland K. 2014. Incidence of type II diabetes in a cohort with substantial exposure to perfluorooctanoic acid. Environ Res 128:78-83. 10.1016/j.envres.2013.11.003.
- Kärrman A, Ericson I, van Bavel B, et al. 2007. Exposure of perfluorinated chemicals through lactation: Levels of matched human milk and serum and a temporal trend, 1996-2004, in Sweden. Environ Health Perspect 115:226-230.
- Kärrman A, van Bavel B, Jarnberg U, et al. 2005. Development of a solid-phase extraction-HPLC/single quadrupole MS method for quantification of perfluorochemicals in whole blood. Anal Chem 77:864-870.
- Katakura M, Kudo N, Tsuda T, et al. 2007. Rat organic anion transporter 3 and organic anion transporting polypeptide 1 mediate perfluorooctanoic acid transport. J Health Sci 53:77-83.
- Kataria A, Trachtman H, Malaga-Dieguez L, et al. 2015. Association between perfluoroalkyl acids and kidney function in a cross-sectional study of adolescents. Environ Health 14:89. http://doi.org/10.1186/s12940-015-0077-9.
- +Kato H, Fujii S, Takahashi M, et al. 2015. Repeated dose and reproductive/developmental toxicity of perfluorododecanoic acid in rats. Environ Toxicol 30:1244-1263.
- Kato K, Calafat AM, Needham LL. 2009a. Polyfluoroalkyl chemicals in house dust. Environ Res 109(12):518-523.
- Kato K, Calafat AM, Wong LY, et al. 2009b. Polyfluoroalkyl compounds in pooled sera from children participating in the National Health and Nutrition Examination Survey 2001-2002. Environ Sci Technol 43(7):2641-2647.

PERFLUOROALKYLS 790 8. REFERENCES

- Kato K, Wong LY, Chen A, et al. 2014. Changes in serum concentrations of maternal poly- and perfluoroalkyl substances over the course of pregnancy and predictors of exposure in a multiethnic cohort of Cincinnati, Ohio pregnant women during 2003-2006. Environ Sci Technol 48(16):9600-9608
- Kato K, Wong LY, Jia LT, et al. 2011. Trends in exposure to polyfluoroalkyl chemicals in the U.S. Population: 1999-2008. Environ Sci Technol 45(19):8037-8045. http://doi.org/10.1021/es1043613.
- Kauck EA, Diesslin AR. 1951. Some properties of perfluorocarboxylic acids. Ind Eng Chem 43(10):2332-2334.
- +Kawabata K, Matsuzaki H, Nukui S, et al. 2017. Perfluorododecanoic acid induces cognitive deficit in adult rats. Toxicol Sci 157(2):421-428. 10.1093/toxsci/kfx058.
- Kawamoto K, Oashi T, Oami K, et al. 2010. Perfluorooctanoic acid (PFOA) but not perfluorooctane sulfonate (PFOS) showed DNA damage in comet assay on *Paramecium caudatum*. J Toxicol Sci 35(6):835-841.
- +Kawamoto K, Sato I, Tsuda S, et al. 2011. Ultrasonic-induced tonic convulsion in rats after subchronic exposure to perfluorooctane sulfonate (PFOS). J Toxicol Sci 36(1):55-62.
- +Kawashima Y, Kobayashi H, Miura H, et al. 1995. Characterization of hepatic responses of rat to administration of perfluorooctanoic and perfluorodecanoic acids at low levels. Toxicology 99(3):169-178.
- +Keil DE, Mehlmann T, Butterworth L, et al. 2008. Gestational exposure to perfluorooctane sulfonate (PFOS) suppresses immune function in B6C3F1 mice. Toxicol Sci 103(1):77-85.
- Keller JM, Kannan K, Taniyasu S, et al. 2005. Perfluorinated compounds in the plasma of loggerhead and Kemp's ridley sea turtles from the southeastern coast of the United States. Environ Sci Technol 39:9101-9108.
- Kelly J, Solem L. 2009. Identification of a major source of perfluorooctane sulfonate (PFOS) at a wastewater treatment plant in Brainerd, Minnesota. Reprod Toxicol 27:417-428.
- Kelly BC, Ikonomou MG, Blair JD, et al. 2007. Food web-specific biomagnification of persistent organic pollutants. Science 317:236-238.
- Kemper RA. 2003. Perfluorooctanoic acid: Toxicokinetics in the rat. Association of Plastics Manufactures of Europe. Submitted to the U.S. Environmental Protection Agency's Administrative Record. AR226-1499.
- Kemper RA, Nabb DL. 2005. *In vitro* studies in microsomes from rat and human liver, kidney, and intestine suggest that perfluorooctanoic acid is not a substrate for microsomal UDP-glucuronosyltransferases. Drug Chem Toxicol 28(3):281-287.
- +Kennedy GL. 1985. Dermal toxicity of ammonium perfluorooctanoate. Toxicol Appl Pharmacol 81(2):348-355.
- +Kennedy GL. 1987. Increase in mouse liver weight following feeding of ammonium perfluorooctanoate and related fluorochemicals. Toxicol Lett 39(2-3):295-300.
- Kennedy GL, Butenhoff JL, Olsen GW, et al. 2004. The toxicology of perfluorooctanoate. Crit Rev Toxicol 34(4):351-384.
- +Kennedy GL, Hall GT, Brittelli MR, et al. 1986. Inhalation toxicity of ammonium perfluorooctanoate. Food Chem Toxicol 24(12):1325-1329.
- Kerstner-Wood C, Coward L, Gorman G. 2003. Protein binding of perfluorohexane sulfonate, perfluorooctane sulfonate and perfluorooctanoate to plasma (human, rat, and monkey), and various human-derived plasma protein fractions. Southern Research Institute. Submitted to the U.S. Environmental Protection Agency's Administrative Record. AR226-1354.
- Khalil N, Chen A, Lee M, et al. 2016. Association of perfluoroalkyl substances, bone mineral density, and osteoporosis in the U.S. Population in NHANES 2009-2010. Environ Health Perspect 124(1):81-87. 10.1289/ehp.1307909.
- Khalil N, Ebert JR, Honda M, et al. 2018. Perfluoroalkyl substances, bone density, and cardio-metabolic risk factors in obese 8-12 year old children: A pilot study. Environ Res 160:314-321. http://doi.org/10.1016/j.envres.2017.10.014.

PERFLUOROALKYLS 791 8. REFERENCES

- Kielsen K, Shamin Z, Ryder LP, et al. 2016. Antibody response to booster vaccination with tetanus and diphtheria in adults exposed to perfluorinated alkylates. J Immunotoxicol 13(2):270-273.
- Kim S, Kannan K. 2007. Perfluorinated acids in air, rain, snow, surface runoff, and lakes: Relative importance of pathways to contamination of urban lakes. Environ Sci Technol 41:8328-8334.
- Kim DH, Kim UJ, Kim HY, et al. 2016a. Perfluoroalkyl substances in serum from South Korean infants with congenital hypothyroidism and healthy infants Its relationship with thyroid hormones. Environ Res 147:399-404. 10.1016/j.envres.2016.02.037.
- Kim S, Shin H, Lee Y, et al. 2018. Sex-specific risk assessment of PFHxS using a physiologically based pharmacokinetic model. Arch Toxicol 92(3):1113-1131. http://doi.org/10.1007/s00204-017-2116-5.
- Kim SJ, Heo SH, Lee DS, et al. 2016b. Gender differences in pharmacokinetics and tissue distribution of 3 perfluoroalkyl and polyfluoroalkyl substances in rats. Food Chem Toxicol 97:243-255.
- Kim SK, Lee KT, Kang CS, et al. 2011. Distribution of perfluorochemicals between sera and milk from the same mothers and implications for prenatal and postnatal exposures. Environ Pollut 159(1):169-174.
- Kim WR, Flamm SL, Di Bisceglie AM, et al. 2008. Serum activity of alanine aminotransferase (ALT) as an indicator of health and disease. Hepatology 47(4):1363-1370.
- +Kinney LA, Chromey NC, Kennedy Jr GL. 1989. Acute inhalation toxicity of ammonium perfluorononanoate. Food Chem Toxicol 21(1):46-68.
- +Kirkpatrick J. 2005. A combined 28-day repeated dose oral toxicity study with the reproduction/developmental toxicity screening test of perfluorohexanoic acid and 1H, 1H, 2H, 2H-tridecafluoro-1-octanol in rats, with recovery. Final report. Volume 1 of 6 (text and tables 1-75). WIL-534001. WIL Research Laboratories, LLC.
- Kishi R, Nakajima T, Goudarzi H, et al. 2015. The association of prenatal exposure to perfluorinated chemicals with maternal essential and long-chain polyunsaturated fatty acids during pregnancy and the birth weight of their offspring: The Hokkaido Study. Environ Health Perspect 123(10):1038-1045. 10.1289/ehp.1408834.
- Kissa E. 2001. Fluorinated surfactants and repellents. 2nd ed. Revised and expanded. New York, NY: Marcel Dekker, Inc., 1-101, 198-269, 349-379, 451-487.
- Kjeldsen LS, Bonefeld-Jørgensen EC. 2013. Perfluorinated compounds affect the function of sex hormone receptors. Environ Sci Pollut Res Int 20(11):8031-8044.
- Klaunig JE, Babich MA, Baetcke KP, et al. 2003. PPARα agonist-induced rodent tumors: Modes of action and human relevance. Crit Rev Toxicol 33(6):655-780.
- Klaunig JE, Hocevar BA, Kamendulis LM. 2012. Mode of action analysis of perfluorooctanoic acid (PFOA) tumorigenicity and human relevance. Reprod Toxicol 33(4):410-418.
- +Klaunig JE, Shinohara M, Iwai H, et al. 2015. Evaluation of the chronic toxicity and carcinogenicity of perfluorohexanoic acid (PFHxA) in Sprague-Dawley rats. Toxicol Pathol 43(2):209-220. 10.1177/0192623314530532.
- Knox SS, Jackson T, Frisbee SJ, et al. 2011a. Perfluorocarbon exposure, gender and thyroid function in the C8 Health Project. J Toxicol Sci 36(4):403-410.
- Knox SS, Jackson T, Javins B, et al. 2011b. Implications of early menopause in women exposed to perfluorocarbons. J Clin Endocrinol Metab 96(6):1747-1753. I 10.1210/jc.2010-2401.
- Kobayashi S, Azumi K, Goudarzi H, et al. 2017. Effects of prenatal perfluoroalkyl acid exposure on cord blood IGF2/H19 methylation and ponderal index: The Hokkaido Study. J Expo Sci Environ Epidemiol 27(3):251-259. http://doi.org/10.1038/jes.2016.50.
- Kobayashi Y, Hirokawa N, Ohshiro N, et al. 2002. Differential gene expression of organic anion transporters in male and female rats. Biochem Biophys Res Commun 290:482-487.
- Konwick BJ, Tomy GT, Ismail N, et al. 2008. Concentrations and patterns of perfluoroalkyl acids in Georgia, USA surface waters near and distant to a major use source. Environ Toxicol Chem 27(10):2011-2018.

PERFLUOROALKYLS 792 8. REFERENCES

- Koshy TT, Attina TM, Ghassabian A, et al. 2017. Serum perfluoroalkyl substances and cardiometabolic consequences in adolescents exposed to the World Trade Center disaster and a matched comparison group. Environ Int 109:128-135. http://doi.org/10.1016/j.envint.2017.08.003.
- +Koskela A, Finnila MA, Korkalainen M, et al. 2016. Effects of developmental exposure to perfluorooctanoic acid (PFOA) on long bone morphology and bone cell differentiation. Toxicol Appl Pharmacol 301:14-21. 10.1016/j.taap.2016.04.002.
- Kotthoff M, Muller J, Jurling H, et al. 2015. Perfluoroalkyl and polyfluoroalkyl substances in consumer products. Environ Sci Pollut Res Int 22(19):14546-14559. 10.1007/s11356-015-4202-7.
- Koustas E, Lam J, Sutton P, et al. 2014. The Navigation Guide evidence-based medicine meets environmental health: Systematic review of nonhuman evidence for PFOA effects on fetal growth. Environ Health Perspect 122(10):1015-1027.
- Krippner J, Brunn H, Falk S, et al. 2014. Effects of chain length and pH on the uptake and distribution of perfluoroalkyl substances in maize (*Zea mays*). Chemosphere 94:85-90. http://doi.org/10.1016/j.chemosphere.2013.09.018.
- Krippner J, Falk S, Brunn H, et al. 2015. Accumulation potentials of perfluoroalkyl carboxylic acids (PFCAs) and perfluoroalkyl sulfonic acids (PFSAs) in maize (*Zea mays*). J Agric Food Chem 63(14):3646-3653. http://doi.org/10.1021/acs.jafc.5b00012.
- Krishnan K, Andersen ME, Clewell HJ, et al. 1994. Physiologically based pharmacokinetic modeling of chemical mixtures. In: Yang RSH, ed. Toxicology of chemical mixtures: Case studies, mechanisms, and novel approaches. San Diego, CA: Academic Press, 399-437.
- Kristensen SL, Ramlau-Hansen CH, Ernst E, et al. 2013. Long-term effects of prenatal exposure to perfluoroalkyl substances on female reproduction. Hum Reprod 28(12):3337-3348. 10.1093/humrep/det382.
- Kroschwitz JI, Howe-Grant M. 1994. Perfluorooctanoic. Kirk-Othmer encyclopedia of chemical toxicology. 4th ed. Vol. 11. New York, NY: John Wiley & Sons, Inc., 551.
- Krusic PJ, Roe DC. 2004. Gas-phase NMR technique for studying the thermolysis of materials: Thermal decomposition of ammonium perfluorooctanoate. Anal Chem 76(13):3800-3803.
- Krusic PJ, Marchione AA, Roe DC. 2005. Gas-phase NMR studies of the thermolysis of perfluoroooctanoic acid. J Fluor Chem 126:1510-1516.
- Kubwabo C, Stewart B, Zhu J, et al. 2005. Occurrence of perfluorosulfonates and other perfluorochemicals in dust from selected homes in the city of Ottawa, Canada. J Environ Monit 7:1074-1078.
- Kudo N, Kawashima Y. 1997. Fish oil-feeding prevents perfluorooctanoic acid-induced fatty liver in mice. Toxicol Appl Pharmacol 145(2):285-293.
- Kudo N, Kawashima Y. 2003. Induction of triglyceride accumulation in the liver of rats by perfluorinated fatty acids with different carbon chain lengths: Comparison with induction of peroxisomal β-oxidation. Biol Pharm Bull 26(1):47-51.
- Kudo N, Bandai N, Suzuki E, et al. 2000. Induction by perfluorinated fatty acids with different carbon chain length of peroxisomal β-oxidation in the liver of rats. Chem Biol Interact 124:119-132.
- Kudo N, Iwase Y, Okayachi H, et al. 2005. Induction of hepatic peroxisome proliferation by 8-2 telomer alcohol feeding in mice: Formation of perfluorooctanoic acid in the liver. Toxicol Sci 86(2):231-238.
- Kudo N, Katakura M, Sato Y, et al. 2002. Sex hormone-regulated renal transport of perfluorooctanoic acid. Chem Biol Interact 139:301-316.
- Kudo N, Mizuguchi H, Yamamoto A, et al. 1999. Alterations by perfluorooctanoic acid of glycerolipid metabolism in rat liver. Chem Biol Interact 118:69-83.
- Kudo N, Sakai A, Mitsumoto A, et al. 2007. Tissue distribution and hepatic subcellular distribution of perfluorooctanoic acid at low dose are different from those at high dose in rats. Biol Pharm Bull 30(8):1535-1540.
- Kudo N, Suzuki E, Katakura M, et al. 2001. Comparison of the elimination between perfluorinated fatty acids with different carbon chain length in rats. Chem Biol Interact 134:203-216.

PERFLUOROALKYLS 793 8. REFERENCES

- Kudo N, Suzuki-Nakajima E, Mitsumoto A, et al. 2006. Responses of the liver to perfluorinated fatty acids with different carbon chain length in male and female mice: In relation to induction of hepatomegaly, peroxisomal β-oxidation and microsomal 1-acylglycerophosphocholine acyltransferase. Biol Pharm Bull 29(9):1952-1957.
- Kuklenyik Z, Reich JA, Tully JS, et al. 2004. Automated solid-phase extraction and measurement of perfluorinated organic acids and amides in human serum and milk. Environ Sci Technol 38(13):3698-3704.
- Kunleda H, Shinoda K. 1976. Krafft points, critical micelle concentrations, surface tension, and solubilizing power of aqueous solutions of fluorinated surfactants. J Phys Chem 80:2468-2470.
- Kvist L, Giwercman YL, Jonsson BA, et al. 2012. Serum levels of perfluorinated compounds and sperm Y:X chromosome ratio in two European populations and in Inuit from Greenland. Reprod Toxicol 34(4):644-650.
- Kwan WC. 2001. Physical property determination of perfluorinated surfactants A thesis submitted in conformity with the requirements for the degree of Masters of Science in Environmental Chemistry, Graduate Department of Chemistry, University of Toronto. https://tspace.library.utoronto.ca/bitstream/1807/16278/1/MQ62941.pdf. March 8, 2019.
- Lam J, Koustas E, Sutton P, et al. 2014. The Navigation Guide evidence-based medicine meets environmental health: Integration of animal and human evidence for PFOA effects on fetal growth. Environ Health Perspect 122(10):1040-1051. http://doi.org/10.1289/ehp.1307923.
- Landsteiner A, Huset C, Johnson J, et al. 2014. Biomonitoring for perfluorochemicals in a Minnesota community with known drinking water contamination. J Environ Health 77(5):14-19.
- Lang JR, Allred BM, Field JA, et al. 2017. National estimate of per- and polyfluoroalkyl substance (PFAS) release to U.S. municipal landfill leachate. Environ Sci Technol 51(4):2197-2205. http://doi.org/10.1021/acs.est.6b05005.
- Lankova D, Lacina O, Pulkrabova J, et al. 2013. The determination of perfluoroalkyl substances, brominated flame retardants and their metabolites in human breast milk and infant formula. Talanta 117:318-325.
- +Lau C, Thibodeaux JR, Hanson RG, et al. 2003. Exposure to perfluorooctane sulfonate during pregnancy in rat and mouse. II: Postnatal evaluation. Toxicol Sci 74(2):382-392.
- +Lau C, Thibodeaux JR, Hanson RG, et al. 2006. Effects of perfluorooctanoic acid exposure during pregnancy in the mouse. Toxicol Sci 90(2):510-518.
- Lauritzen HB, Larose TL, Oien T, et al. 2017. Maternal serum levels of perfluoroalkyl substances and organochlorines and indices of fetal growth: A Scandinavian case-cohort study. Pediatr Res 81(1-1):33-42. http://doi.org/10.1038/pr.2016.187.
- +Lee CK, Kang SG, Lee JT, et al. 2015a. Effects of perfluorooctane sulfuric acid on placental PRL-family hormone production and fetal growth retardation in mice. Mol Cell Endocrinol 401:165-172. 10.1016/j.mce.2014.10.026.
- Lee ES, Han S, Oh JE. 2016. Association between perfluorinated compound concentrations in cord serum and birth weight using multiple regression models. Reprod Toxicol 59:53-59. 10.1016/j.reprotox.2015.10.020.
- Lee YJ, Kim M-K, Bae J, et al. 2013. Concentrations of perfluoroalkyl compounds in maternal and umbilical cord sera and birth outcomes in Korea. Chemosphere 90(5):1603-1609.
- +Lee YY, Wong CK, Oger C, et al. 2015b. Prenatal exposure to the contaminant perfluorooctane sulfonate elevates lipid peroxidation during mouse fetal development but not in the pregnant dam. Free Radic Res 49(8):1015-1025. 10.3109/10715762.2015.1027199.
- +Lefebvre DE, Curran I, Armstrong C, et al. 2008. Immunomodulatory effects of dietary potassium perfluorooctane sulfonate (PFOS) exposure in adult Sprague-Dawley rats. J Toxicol Environ Health A 71(23):1516-1525.
- Lemieux P, Strynar M, Tabor D, et al. 2007. Emissions of fluorinated compounds from the combustion of carpeting. In: International conference on incineration and thermal treatment technologies. May

PERFLUOROALKYLS 794 8. REFERENCES

- 14-18, 2007. Phoenix, Arizona. U.S. Environmental Protection Agency. http://www.epa.gov/nhsrc/pubs/paperFluorCompounds101007.pdf. December 7, 2009.
- Lenters V, Portengen L, Rignell-Hydbom A, et al. 2016a. Prenatal phthalate, perfluoroalkyl acid, and organochlorine exposures and term birth weight in three birth cohorts: Multi-pollutant models based on elastic net regression. Environ Health Perspect 124(3):365-372. 10.1289/ehp.1408933.
- Lenters V, Portengen L, Rignell-Hydbom A, et al. 2016b. Supplemental material to prenatal phthalate, perfluoroalkyl acid, and organochlorine exposures and term birth weight in three birth cohorts:

 Multi-pollutant models based on elastic net regression. [Environ Health Perspect 124(3):365-372]. 10.1289/ehp.1408933.
- Leonard RC. 2006. Ammonium perfluorooctanoate: Phase II. Retrospective cohort mortality analyses related to a serum biomarker of exposure in a polymer production plant. Wilmington, DE: E.I. du pont de Nemours and Company.
- Leonard RC, Kreckmann KH, Sakr CJ, et al. 2008. Retrospective cohort mortality study of workers in a polymer production plant including a reference population of regional workers. Ann Epidemiol 18:15-22.
- Lewis RC, Johns LE, Meeker JD. 2015. Serum biomarkers of exposure to perfluoroalkyl substances in relation to serum testosterone and measures of thyroid function among adults and adolescents from NHANES 2011-2012. Int J Environ Res Public Health 12(6):6098-6114.
- +Li L, Li X, Chen X, et al. 2018. Perfluorooctane sulfonate impairs rat Leydig cell development during puberty. Chemosphere 190:43-53. http://doi.org/10.1016/j.chemosphere.2017.09.116.
- Li L, Zhai Z, Liu J, et al. 2015. Estimating industrial and domestic environmental releases of perfluorooctanoic acid and its salts in China from 2004 to 2012. Chemosphere 129:100-109. 10.1016/j.chemosphere.2014.11.049.
- Li N, Hartley DP, Cherrington NJ, et al. 2002. Tissue expression, ontogeny, and inducibility of rat organic anion transporting polypeptide. J Pharmacol Exp Ther 301(2):551-560.
- Li M, Zeng XW, Qian ZM, et al. 2017. Isomers of perfluorooctanesulfonate (PFOS) in cord serum and birth outcomes in China: Guangzhou Birth Cohort Study. Environ Int 102:1-8. http://doi.org/10.1016/j.envint.2017.03.006.
- +Li X, Ye L, Ge Y, et al. 2016. *In utero* perfluorooctane sulfonate exposure causes low body weights of fetal rats: A mechanism study. Placenta 39:125-133. 10.1016/j.placenta.2016.01.010.
- Li Y, Fletcher T, Mucs D, et al. 2018. Half-lives of PFOS, PFHxS and PFOA after end of exposure to contaminated drinking water. Occup Environ Med 75(1):46-51. 10.1136/oemed-2017-104651.
- Li Y, Ramdhan DH, Naito H, et al. 2011. Ammonium perfluorooctanoate may cause testosterone reduction by adversely affecting testis in relation to PPARα. Toxicol Lett 205(3):265-272. http://dx.doi.org/10.1016/j.toxlet.2011.06.015.
- Lide DR. 2005. Pentadecafluorooctanoic acid, nondecafluorodecanoic acid, and heptafluorobutanoic acid. In: CRC handbook of chemistry and physics. 86th ed. Boca Raton, FL: Taylor and Francis, 3-412, 3-372, 3-398.
- +Lieder PH, Chang SC, York RG, et al. 2009a. Toxicological evaluation of potassium perfluorobutanesulfonate in a 90-day oral gavage study with Sprague-Dawley rats. Toxicology 255:45-52.
- +Lieder PH, York RG, Hakes DC, et al. 2009b. A two-generation oral gavage reproduction study with potassium perfluorobutanesulfonate (K+PFBS) in Sprague-Dawley rats. Toxicology 259:33-45.
- Lien GW, Huang CC, Shiu JS, et al. 2016. Perfluoroalkyl substances in cord blood and attention deficit/hyperactivity disorder symptoms in seven-year-old children. Chemosphere 156:118-127. 10.1016/j.chemosphere.2016.04.102.
- Lien GW, Huang CC, Wu KY, et al. 2013. Neonatal-maternal factors and perfluoroalkyl substances in cord blood. Chemosphere 92(7):843-850.
- Liew Z, Ritz B, Bonefeld-Jorgensen EC, et al. 2014. Prenatal exposure to perfluoroalkyl substances and the risk of congenital cerebral palsy in children. Am J Epidemiol 180(6):574-581. 10.1093/aje/kwu179.

PERFLUOROALKYLS 795 8. REFERENCES

- Liew Z, Ritz B, von Ehrenstein OS, et al. 2015. Attention deficit/hyperactivity disorder and childhood autism in association with prenatal exposure to perfluoroalkyl substances: A nested case-control study in the Danish National Birth Cohort. Environ Health Perspect 123(4):367-373. 10.1289/ehp.1408412.
- Lim TC, Wang B, Huang J, et al. 2011. Emission inventory for PFOS in China: Review of past methodologies and suggestions. Sci World J 11:1963-1980.
- Lin CY, Chen PC, Lin YC, et al. 2009. Association among serum perfluoroalkyl chemicals, glucose homeostasis, and metabolic syndrome in adolescents and adults. Diabetes Care 32(4):702-707.
- Lin CY, Lin LY, Chiang CK, et al. 2010. Investigation of the associations between low-dose serum perfluorinated chemicals and liver enzymes in US adults. Am J Gastroenterol 105(6):1354-1363.
- Lin CY, Lin LY, Wen TW, et al. 2013a. Association between levels of serum perfluorooctane sulfate and carotid artery intima-media thickness in adolescents and young adults. Int J Cardiol 168(4):3309-3316. 10.1016/j.ijcard.2013.04.042.
- Lin CY, Lin LY, Wen TW, et al. 2013b. Supplemental material: Association between levels of serum perfluorooctane sulfate and carotid artery intima-media thickness in adolescents and young adults. Int J Cardiol 168:3309-3316.
- Lin LY, Wen LL, Su TC, et al. 2014. Negative association between serum perfluorooctane sulfate concentration and bone mineral density in US premenopausal women: NHANES, 2005-2008. The Journal of clinical endocrinology and metabolism 99(6):2173-2180. 10.1210/jc.2013-3409.
- Lind DV, Priskorn L, Lassen TH, et al. 2017a. Prenatal exposure to perfluoroalkyl substances and anogenital distance at 3 months of age in a Danish mother-child cohort. Reprod Toxicol 68:200-206. http://doi.org/10.1016/j.reprotox.2016.08.019.
- Lind L, Zethelius B, Salihovic S, et al. 2014. Circulating levels of perfluoroalkyl substances and prevalent diabetes in the elderly. Diabetologia 57(3):473-479. 10.1007/s00125-013-3126-3.
- Lind PM, Salihovic S, van Bavel B, et al. 2017b. Circulating levels of perfluoroalkyl substances (PFASs) and carotid artery atherosclerosis. Environ Res 152:157-164. http://doi.org/10.1016/j.envres.2016.10.002.
- Lindstrom AB, Strynar MJ, Delinsky AD, et al. 2011. Application of WWTP biosolids and resulting perfluorinated compound contamination of surface and well water in Decatur, Alabama, USA. Environ Sci Technol 45:8015-8021.
- Liu G, Dhana K, Furtado JD, et al. 2018a. Perfluoroalkyl substances and changes in body weight and resting metabolic rate in response to weight-loss diets: A prospective study. PLoS Med 15(2):e1002501. http://doi.org/10.1371/journal.pmed.1002502.
- Liu HS, Wen LL, Chu PL, et al. 2018b. Association among total serum isomers of perfluorinated chemicals, glucose homeostasis, lipid profiles, serum protein and metabolic syndrome in adults: NHANES, 2013-2014. Environ Pollut 232:73-79. http://doi.org/10.1016/j.envpol.2017.09.019.
- Liu J, Liu Y, et al. 2011. Comparison on gestation and lactation exposure of perfluorinated compounds for newborns. Environ Int 37(7):1206-1212.
- Liu J, Lee LS, Nies LF, et al. 2007. Biotransformation of 8:2 fluorotelomer alcohol in soil and by soil bacteria isolates. Environ Sci Technol 41:8024-8030.
- Liu L, Liu W, Song J, et al. 2009. A comparative study on oxidative damage and distributions of perfluorooctane sulfonate (PFOS) in mice at different postnatal developmental stages. J Toxicol Sci 34(3):245-254.
- +Liu RCM, Hurtt ME, Cook JC, et al. 1996. Effect of the peroxisome proliferator, ammonium perfluorooctanoate (C8), on hepatic aromatase activity in adult male Crl:CD BR (CD) rats. Toxicol Sci 30(2):220-228.
- Liu W, Li X, Xu L, et al. 2010. Influence of gestation, regular bleeding and intermittent exposure on blood perfluorooctane sulfonate levels in mice: Potential factors inducing sex difference and affecting exposure evaluation. J Toxicol Sci 35(3):309-316.

PERFLUOROALKYLS 796 8. REFERENCES

- Liu X, Guo Z, Krebs KA, et al. 2014. Concentrations and trends of perfluorinated chemicals in potential indoor sources from 2007 through 2011 in the US. Chemosphere 98:51-57. 10.1016/j.chemosphere.2013.10.001.
- Liu Y, Ruan T, Lin Y, et al. 2017. Chlorinated polyfluoroalkyl ether sulfonic acids in marine organisms from Bohai Sea, China: Occurrence, temporal variations, and trophic transfer behavior. Environ Sci Technol 51(8):4407-4414. http://doi.org/10.1021/acs.est.6b06593.
- Llorca M, Farre M, Pico Y, et al. 2010. Infant exposure of perfluorinated compounds: Levels in breast milk and commercial baby food. Environ Int 36(6):584-592.
- Loccisano AE, Campbell JL, Jr., Andersen ME, et al. 2011. Evaluation and prediction of pharmacokinetics of PFOA and PFOS in the monkey and human using a PBPK model. Regul Toxicol Pharmacol 59(1):157-175.
- Loccisano AE, Campbell JL, Jr., Butenhoff JL, et al. 2012a. Comparison and evaluation of pharmacokinetics of PFOA and PFOS in the adult rat using a physiologically based pharmacokinetic model. Reprod Toxicol 33(4):452-467.
- Loccisano AE, Campbell JL, Jr., Butenhoff JL, et al. 2012b. Evaluation of placental and lactational pharmacokinetics of PFOA and PFOS in the pregnant, lactating, fetal and neonatal rat using a physiologically based pharmacokinetic model. Reprod Toxicol 33(4):468-490.
- Loccisano AE, Longnecker MP, Campbell JL, et al. 2013. Development of PBPK models for PFOA and PFOS for human pregnancy and lactation life stages. J Toxicol Environ Health A 76(1):25-57.
- Loewen M, Halldorson T, Wang F, et al. 2005. Fluorotelomer carboxylic acids and PFOS in rainwater from an urban center in Canada. Environ Sci Technol 39:2944-2951.
- Loganathan BG, Sajwan KS, Sinclair E, et al. 2007. Perfluoroalkyl sulfonates and perfluorocarboxylates in two wastewater treatment facilities in Kentucky and Georgia. Water Res 41(20):4611-4620. doi.org/10.1016/j.watres.2007.06.045.
- Loi EI, Yeung LW, Taniyasu S, et al. 2011. Trophic magnification of poly- and perfluorinated compounds in a subtropical food web. Environ Sci Technol 45(13):5506-5513. http://doi.org/10.1021/es200432n.
- +Long Y, Wang Y, Ji G, et al. 2013. Neurotoxicity of perfluorooctane sulfonate to hippocampal cells in adult mice. PLoS ONE 8(1):e54176.
- Looker C, Luster MI, Calafat AM, et al. 2014. Influenza vaccine response in adults exposed to perfluorooctanoate and perfluorooctanesulfonate. Toxicol Sci 138(1):76-88.
- Loos R, Locoro G, Huber T, et al. 2008. Analysis of perfluorooctanoate (PFOA) and other perfluorinated compounds (PFCs) in the River Po watershed in N-Italy. Chemosphere 71:306-313.
- +López-Doval S, Salgado R, Pereiro N, et al. 2014. Perfluorooctane sulfonate effects on the reproductive axis in adult male rats. Environ Res 134:158-168.
- Lopez-Espinosa MJ, Fletcher T, Armstrong B, et al. 2011. Association of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) with age of puberty among children living near a chemical plant. Environ Sci Technol 45(19):8160-8166.
- Lopez-Espinosa MJ, Mondal D, Armstrong B, et al. 2012. Thyroid function and perfluoroalkyl acids in children living near a chemical plant. Environ Health Perspect 120(7):1036-1041. 10.1289/ehp.1104370.
- Lopez-Espinosa MJ, Mondal D, Armstrong BG, et al. 2016. Perfluoroalkyl substances, sex hormones, and insulin-like growth factor-1 at 6-9 years of age: A Cross-sectional analysis within the C8 Health Project. Environ Health Perspect 124:1269-1275. 10.1289/ehp.1509869.
- Lorber M, Egeghy PP. 2011. Simple intake and pharmacokinetic modeling to characterize exposure of Americans to perfluoro[o]ctanoic acid, PFOA. Environ Sci Technol 45(19):8006-8014. 10.1021/es103718h.
- Lou I, Wambaugh JF, Lau C, et al. 2009. Modeling single and repeated dose pharmacokinetics of PFOA in mice. Toxicol Sci 107(2):331-341.

PERFLUOROALKYLS 797 8. REFERENCES

- +Loveless SE, Finlay C, Everds NE, et al. 2006. Comparative responses of rats and mice exposed to linear/branched, linear, or branched ammonium perfluorooctanoate (APFO). Toxicology 220:203-217.
- +Loveless SE, Hoban D, Sykes G, et al. 2008. Evaluation of the immune system in rats and mice administered linear ammonium perfluorooctanoate. Toxicol Sci 105(1):86-96.
- +Loveless SE, Slezak B, Serex T, et al. 2009. Toxicological evaluation of sodium perfluorohexanoate. Toxicology 264(1-2):32-44. http://doi.org/10.1016/j.tox.2009.07.011.
- Lu R, Kanai N, Bao Y, et al. 1996. Regulation of renal oatp mRNA expression by testosterone. Am J Physiol 270:F332-F337.
- Lubojevic M, Herak-Kramberger CM, Hagos Y, et al. 2004. Rat renal cortical OAT1 and OAT3 exhibit gender differences determined by both androgen stimulation and estrogen inhibition. Am J Physiol 287:F124-F138.
- +Luebker DJ, Case MT, York RG, et al. 2005a. Two-generation reproduction and cross-foster studies of perfluorooctanesulfonate (PFOS) in rats. Toxicology 215(1-2):126-148.
- Luebker DJ, Hansen KJ, Bass NM, et al. 2002. Interactions of fluorochemicals with rat liver fatty acid-binding protein. Toxicology 176:175-185.
- +Luebker DJ, York RG, Hansen KJ, et al. 2005b. Neonatal mortality from *in utero* exposure to perfluorooctanesulfonate (PFOS) in Sprague-Dawley rats: Dose-response, and biochemical and pharmacokinetic parameters. Toxicology 215(1-2):149-169.
- Lundin JI, Alexander BH, Olsen GW, et al. 2009. Ammonium perfluorooctanoate production and occupational mortality. Epidemiology 20(6):921-928.
- Lum KJ, Sundaram R, Barr DB, et al. 2017. Perfluoroalkyl chemicals, menstrual cycle length, and fecundity: Findings from a prospective pregnancy study. Epidemiology 28(1):90-98. http://doi.org/10.1097/ede.000000000000552.
- Luo Z, Shi X, Hu Q, et al. 2012. Structural evidence of perfluorooctane sulfonate transport by human serum albumin. Chem Res Toxicol 25(5):990-992.
- Lv Z, Li G, Li Y, et al. 2013. Glucose and lipid homeostasis in adult rat is impaired by early-life exposure to perfluorooctane sulfonate. Environ Toxicol 28(9):532-542.
- +Lv QY, Wan B, Guo LH, et al. 2015. *In vivo* immunotoxicity of perfluorooctane sulfonate in BALB/c mice: Identification of T-cell receptor and calcium-mediated signaling pathway disruption through gene expression profiling of the spleen. Chem Biol Interact 240:84-93. 10.1016/j.cbi.2015.07.015.
- Lyngsø J, Ramlau-Hansen CH, Hoyer BB, et al. 2014. Menstrual cycle characteristics in fertile women from Greenland, Poland and Ukraine exposed to perfluorinated chemicals: A cross-sectional study. Hum Reprod 29(2):359-367. 10.1093/humrep/det390.
- MacNeil J, Steenland NK, Shankar A, et al. 2009. A cross-sectional analysis of type II diabetes in a community with exposure to perfluorooctanoic acid (PFOA). Environ Res 109(8):997-1003.
- +Macon MB, Villanueva LR, Tatum-Gibbs K, et al. 2011. Prenatal perfluorooctanoic acid exposure in CD-1 mice: Low-dose developmental effects and internal dosimetry. Toxicol Sci 122(1):134-145.
- MacPherson IR, Bissett D, Petty RD, et al. 2011. A first-in-human phase I clinical trial of CXR1002 in patients (pts) with advanced cancer. J Clin Oncol 29(Suppl; abstr 3063).
- Maestri L, Negri S, Ferrari M, et al. 2006. Determination of perfluorooctanoic acid and perfluorooctanesulfonate in human tissues by liquid chromatography/single quadrupole mass spectrometry. Rapid Commun Mass Spectrom 20(18):2728-2734.
- Maher JM, Aleksunes LM, Dieter MZ, et al. 2008. Nrf2- and PPARα-mediated regulation of hepatic Mrp transporters after exposure to perfluorooctanoic acid and perfluorodecanoic acid. Toxicol Sci 106(2):319-328. 10.1093/toxsci/kfn177.
- Maisonet M, Terrell ML, McGeehin MA, et al. 2012. Maternal concentrations of polyfluoroalkyl compounds during pregnancy and fetal and postnatal growth in British girls. Environ Health Perspect 120(10):1432-1437.

- Maisonet M, Calafat AM, Marcus M, et al. 2015a. Prenatal exposure to perfluoroalkyl acids and serum testosterone concentrations at 15 years of age in female ALSPAC study participants. Environ Health Perspect 123(12):1325-1330. 10.1289/ehp.1408847.
- Maisonet M, Nayha S, Lawlor DA, et al. 2015b. Prenatal exposures to perfluoroalkyl acids and serum lipids at ages 7 and 15 in females. Environ Int 82:49-60. 10.1016/j.envint.2015.05.001.
- Mak YL, Taniyasu S, Yeung LW, et al. 2009. Perfluorinated compounds in tap water from China and several other countries. Environ Sci Technol 43(13):4824-4829.
- Makey CM, Webster TF, Martin JW, et al. 2017. Airborne precursors predict maternal serum perfluoroalkyl acid concentrations. Environ Sci Technol 51(13):7667-7675. http://doi.org/10.1021/acs.est.7b00615.
- Maloney EK, Waxman DJ. 1999. *trans*-Activation of PPARα and PPARγ by structurally diverse environmental chemicals. Toxicol Appl Pharmacol 161:209-218.
- Mann PC, Frame SR. 2004. FC-143: Two year oral toxicity-oncogenicity study in rats. Peer review of ovaries. Newark, DE: E.I. du Pont de Nemours and Company. Du Pont Project ID 15261. U.S. EPA AR226.
- Manzano-Salgado CB, Casas M, Lopez-Espinosa MJ, et al. 2015. Transfer of perfluoroalkyl substances from mother to fetus in a Spanish birth cohort. Environ Res 142:471-478. 10.1016/j.envres.2015.07.020
- Manzano-Salgado CB, Casas M, Lopez-Espinosa MJ, et al. 2017a. Prenatal exposure to perfluoroalkyl substances and birth outcomes in a Spanish birth cohort. Environ Int 108:278-284. http://doi.org/10.1016/j.envint.2017.09.00.
- Manzano-Salgado CB, Casas M, Lopez-Espinosa MJ, et al. 2017b. Prenatal exposure to perfluoroalkyl substances and cardiometabolic risk in children from the Spanish INMA birth cohort study. Environ Health Perspect 125(9):097018. http://doi.org/10.1289/ehp1330.
- Martin JW, Ellis DA, Mabury SA. 2006. Atmospheric chemistry of perfluoroalkanesulfonamides: Kinetic and product studies of the OH radical and CI atom initiated oxidation of N-ethyl perfluorobutanesulfonamide. Environ Sci Technol 40:864-872.
- Martin JW, Smithwick MM, Braune BM, et al. 2004a. Identification of long-chain perfluorinated acids in biota from the Canadian Arctic. Environ Sci Technol 38(2):373-380.
- Martin JW, Whittle DM, Muir DCG, et al. 2004b. Perfluoroalkyl contaminants in a food web from Lake Ontario. Environ Sci Technol 38:5379-5385.
- Martin MT, Brennan RJ, Hu W, et al. 2007. Toxicogenomic study of triazole fungicides and perfluoroalkyl acids in rat livers predicts toxicity and categorizes chemicals based on mechanisms of toxicity. Toxicol Sci 97:595-613.
- MassDEP. 2018. Per- and polyfluoroalkyl substances (PFAS). Supporting documentation for drinking water standards and guidelines. Boston, MA: Massachusetts Department of Environmental Protection. https://www.mass.gov/files/documents/2018/06/11/orsg-pfas-20180608.pdf. December 6 2018
- Mattsson K, Rignell-Hydbom A, Holmberg S, et al. 2015. Levels of perfluoroalkyl substances and risk of coronary heart disease: Findings from a population-based longitudinal study. Environ Res 142:148-154. 10.1016/j.envres.2015.06.033.
- McGuire ME, Schaefer C, Richards T, et al. 2014. Evidence of remediation-induced alteration of subsurface poly- and perfluoroalkyl substance distribution at a former firefighter training area. Environ Sci Technol 48(12):6644-6652. http://doi.org/10.1021/es5006187.
- MDH. 2007. Groundwater health risk limits. St. Paul, MN: Minnesota Department of Health. http://www.health.state.mn.us/divs/eh/groundwater/hrltable.html. July 1, 2008.
- MDH. 2009. East Metro perfluorochemical biomonitoring pilot project. Minnesota Department of Health, Minnesota Environment, Exposure and Health. http://www.health.state.mn.us/divs/hpcd/tracking/biomonitoring/projects/pfcfinalrpt2009.pdf. May 5, 2014.

- MDH. 2014. Dual guidance for drinking water. Saint Paul, Minnesota: Minnesota Department of Health. http://www.health.state.mn.us/divs/eh/risk/guidance/dualguidance.html. November 30, 2018.
- MDH. 2019. Human health-based water guidance table. Saint Paul, MN: Minnesota Department of Health. https://www.health.state.mn.us/communities/environment/risk/guidance/gw/table.html. April 25, 2019.
- MECDC. 2016. Maine CDC maximum exposure guidelines (MEGs) for drinking water. Augusta, ME: Maine Center for Disease Control and Prevention. http://maineenvironmentallaboratory.com/newsite/wp-content/uploads/megtable2016.pdf. December 18, 2017.
- Meesters RJ, Schröder HF. 2004. Perfluorooctane sulfonate- a quite mobile anionic anthropogenic surfactant, ubiquitously found in the environment. Water Sci Technol 50(5):235-242.
- Melzer D, Rice N, Depledge MH, et al. 2010. Association between serum perfluorooctanoic acid (PFOA) and thyroid disease in the U.S. National Health and Nutrition Examination Survey. Environ Health Perspect 118(5):686-692.
- Michigan DEQ. 2016. Rule 57 water quality values. Lansing, MI: Michigan Department of Environmental Quality. http://www.michigan.gov/documents/deq/wrd-swas-rule57_372470_7.pdf. December 18, 2017.
- Michigan DEQ. 2018a. Table 1. Groundwater: Residential and nonresidential: Part 201 generic cleanup criteria and screening levels. Lansing, MI: Michigan Department of Environmental Quality. https://www.michigan.gov/documents/deq/deq-rrd-UpdatedGroundwaterCleanupCrieriaTableWithFootnotesPFOSPFOA1-25-2017_610379_7.pdf. November 30, 2018.
- Michigan DEQ. 2018b. R 299. 49 Footnotes for generic cleanup criteria tables. Lansing, MI: Michigan Department of Environmental Quality. https://www.michigan.gov/documents/deq/deq-rrd-Rules-2013Footnotes_447068_7.pdf. November 30, 2018.
- Midasch O, Drexler H, Hart N, et al. 2007. Transplacental exposure of neonates to perfluorooctanesulfonate and perfluorooctanoate: A pilot study. Int Arch Occup Environ Health 80:643-648.
- Min JY, Lee KJ, Park JB, et al. 2012. Perfluorooctanoic acid exposure is associated with elevated homocysteine and hypertension in US adults. Occup Environ Med 69(9):658-662.
- Minata M, Harada KH, Kärrman A, et al. 2010. Role of peroxisome proliferator-activated receptor-α in hepatobiliary injury induced by ammonium perfluorooctanoate in mouse liver. Ind Health 48:96-107.
- Minatoya M, Itoh S, Miyashita C, et al. 2017. Association of prenatal exposure to perfluoroalkyl substances with cord blood adipokines and birth size: The Hokkaido Study on environment and children's health. Environ Res 156:175-182. http://doi.org/10.1016/j.envres.2017.03.033.
- Mitro SD, Dodson RE, Singla V, et al. 2016. Consumer product chemicals in indoor dust: A quantitative meta-analysis of U.S. studies. Environ Sci Technol 50(19):10661-10672. http://doi.org/10.1021/acs.est.6b02023.
- Mondal D, Lopez-Espinosa MJ, Armstrong B, et al. 2012. Relationships of perfluorooctanoate and perfluorooctane sulfonate serum concentrations between mother-child pairs in a population with perfluorooctanoate exposure from drinking water. Environ Health Perspect 120(5):752-757.
- Mondal D, Weldon RH, Armstrong BG, et al. 2014. Breastfeeding: A potential excretion route for mothers and implications for infant exposure to perfluoroalkyl acids. Environ Health Perspect 122(2):187-192.
- Monroy R, Morrison K, Teo K, et al. 2008. Serum levels of perfluoroalkyl compounds in human maternal and umbilical cord blood samples. Environ Res 108:56-62.
- Moody CA, Field JA. 1999. Determination of perfluorocarboxylates in groundwater impacted by fire-fighting activity. Environ Sci Technol 33(16):2800-2806.

- Moody CA, Field JA. 2000. Perfluorinated surfactants and the environmental implications of their use in fire-fighting foams. Environ Sci Technol 34(18):3864-3870. http://doi.org/10.1021/es991359u.
- Moody CA, Hebert GN, Strauss SH, et al. 2003. Occurrence and persistence of perfluorooctanesulfonate and other perfluorinated surfactants in groundwater at a fire-training area at Wurtsmith Air Force Base, Michigan, USA. J Environ Monit 5:341-345.
- Mogensen UB, Grandjean P, Nielsen F, et al. 2015b. Breastfeeding as an exposure pathway for perfluorinated alkylates. Environ Sci Technol 49(17):10466-10473. 10.1021/acs.est.5b02237.
- Mogensen UB, Grandjean P, Heilmann C, et al. 2015a. Structural equation modeling of immunotoxicity associated with exposure to perfluorinated alkylates. Environ Health 14:47 10.1186/s12940-015-0032-9.
- Mora AM, Oken E, Rifas-Shiman SL, et al. 2017. Prenatal exposure to perfluoroalkyl substances and adiposity in early and mid-childhood. Environ Health Perspect 125(3):467-473. http://doi.org/10.1289/ehp246.
- Morello-Frosch R, Cushing LJ, Jesdale BM, et al. 2016. Environmental chemicals in an urban population of pregnant women and their newborns from San Francisco. Environ Sci Technol 50:12464-12472.
- Moriwaki H, Takata Y, Arakawa R. 2003. Concentrations of perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) in vacuum cleaner dust collected in Japanese homes. J Environ Monit 5:753-757.
- Mundt DJ, Mundt KA, Luippold RS, et al. 2007. Clinical epidemiological study of employees exposed to surfactant blend containing perfluorononanoic acid. Occup Environ Med 64:589-594.
- Murakami M, Imamura E, Shinohara H, et al. 2008. Occurrence and sources of perfluorinated surfactants in rivers in Japan. Environ Sci Technol 42(17):6566-6572.
- Nabb DL, Szostek B, Himmelstein MW, et al. 2007. *In vitro* metabolism of 8-2 fluorotelomer alcohol: Interspecies comparisons and metabolic pathway refinement. Toxicol Sci 100(2):333-344.
- Nakagawa H, Hirata T, Terada T, et al. 2008. Roles of organic anion transporters in the renal excretion of perfluorooctanoic acid. Basic Clin Pharmacol Toxicol 103(1):1-8.
- Nakagawa H, Terada T, Harada KH, et al. 2009. Human organic anion transporter hOAT4 is a transporter of perfluorooctanoic acid. Basic Clin Pharmacol Toxicol 105(2):136-138.
- Nakayama S, Strynar MJ, Helfant L, et al. 2007. Perfluorinated compounds in the Cape Fear drainage basin in North Carolina. Environ Sci Technol 41(15):5271-5276.
- Nakagawa T, Ramdhan D, Tanaka N, et al. 2012. Modulation of ammonium perfluorooctanoate-induced hepatic damage by genetically different PPARα in mice. Arch Toxicol 86(1):63-74.
- NAS/NRC. 1989. Report of the oversight committee. In: Biologic markers in reproductive toxicology. Washington, DC: National Academy of Sciences, National Research Council, National Academy Press, 15-35.
- NCDENR. 2012. Memorandum: NCSAB recommendation for the revision of the IMAC for perfluorooctanoic acid (PFOA). August 10, 2012. Raleigh, NC: North Carolina Department of Environment and Natural Resources Division of Air Quality. https://ncdenr.s3.amazonaws.com/s3fs-public/Air%20Quality/toxics/risk/sab/LAA/20120808%20PFOA%20Final%20Risk%20Assessment %20signed.pdf. December 18, 2017.
- NC DEQ. 2013. Appendix 1: Interim maximum allowable concentrations (IMACs). Raleigh, NC: North Carolina Department of Environmental Quality. https://files.nc.gov/ncdeq/documents/files/IMAC%20table_5-22-13.pdf. December 19, 2017.
- NDEP. 2017. Basic comparison levels. Carson City, NE: Nevada Division of Environmental Protection. https://ndep.nv.gov/uploads/documents/july-2017-ndep-bcls.pdf. December 18, 2017.
- Needham LL, Grandjean P, Heinzow B, et al. 2011. Partition of environmental chemicals between maternal and fetal blood and tissues. Environ Sci Technol 45(3):1121-1126.

- Negri E, Metruccio F, Guercio V, et al. 2017. Exposure to PFOA and PFOS and fetal growth: A critical merging of toxicological and epidemiological data. Crit Rev Toxicol 47(6):489-515. http://doi.org/10.1080/10408444.2016.1271972.
- Nelson JW, Hatch EE, Webster TF. 2010. Exposure to polyfluoroalkyl chemicals and cholesterol, body weight, and insulin resistance in the general U.S. population. Environ Health Perspect 118(2):197-202.
- Newton S, McMahen R, Stoeckel JA, et al. 2017. Novel polyfluorinated compounds identified using high resolution mass spectrometry downstream of manufacturing facilities near Decatur, Alabama. Environ Sci Technol 51(3):1544-1552. http://doi.org/10.1021/acs.est.6b05330.
- +Ngo HT, Hetland RB, Sabaredzovic A, et al. 2014. *In utero* exposure to perfluorooctanoate (PFOA) or perfluorooctane sulfonate (PFOS) did not increase body weight or intestinal tumorigenesis in multiple intestinal neoplasia (Min/+) mice. Environ Res 132:251-263. 10.1016/j.envres.2014.03.033.
- Ngueta G, Longnecker MP, Yoon M, et al. 2017. Quantitative bias analysis of a reported association between perfluoroalkyl substances (PFAS) and endometriosis: The influence of oral contraceptive use. Environ Int 104:118-121.
- NH HHS. 2016. Pease PFC blood testing program: April 2015–October 2015: Pease Tradeport, Portsmouth, NH. State of New Hampshire, Department of Health and Human Services. https://www.dhhs.nh.gov/dphs/documents/pease-pfc-blood-testing.pdf. March 8, 2019.
- Nilsson R, Beije B, Preat V, et al. 1991. On the mechanism of the hepatocarcinogenicity of peroxisome proliferations. Chem Biol Interact 78:235-250.
- NIOSH. 2016. Index of Chemical Abstracts Service Registry Numbers (CAS No.). NIOSH pocket guide to chemical hazards. Index of Chemical Abstracts Service Registry Numbers (CAS No.). Atlanta, GA: National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention. https://www.cdc.gov/niosh/npg/npgdcas.html. February 28, 2017.
- Noker PE, Gorman GS. 2003. A pharmacokinetic study of potassium perfluorooctanesulfonate in the Cynomolgus monkey. St. Paul, MN: 3M Corporation.
- Nolan LA, Nolan JM, Shofer FS, et al. 2009. The relationship between birth weight, gestational age and perfluorooctanoic acid (PFOA)-contaminated public drinking water. Reprod Toxicol 27:231-238.
- Nolan LA, Nolan JM, Shofer FS, et al. 2010. Congenital anomalies, labor/delivery complications, maternal risk factors and their relationship with perfluorooctanoic acid (PFOA)-contaminated public drinking water. Reprod Toxicol 29(2):147-155.
- North Carolina Department of Environmental Quality. 2013. Appendix 1: Interim maximum allowable concentrations (IMACs). Raleigh, NC: North Carolina Department of Environmental Quality. https://files.nc.gov/ncdeq/documents/files/IMAC%20table 5-22-13.pdf. December 19, 2017.
- NTP. 2016a. CASRN Index in MS Excel. Report on carcinogens, Fourteenth Edition. Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service, National Toxicology Program. https://ntp.niehs.nih.gov/pubhealth/roc/index-1.html#P. February 28, 2017.
- NTP. 2016b. NTP Monograph on immunotoxicity associated with exposure to perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service, National Toxicology Program. https://ntp.niehs.nih.gov/ntp/ohat/pfoa_pfos/pfoa_pfosmonograph_508.pdf. December 21, 2017.
- Oda Y, Nakayama S, Harada KH, et al. 2007. Negative results of *umu* genotoxicity test of fluorotelomer alcohols and perfluorinated alkyl acids. Environ Health Prev Med 12:217-219.
- Ode A, Kallen K, Gustafsson P, et al. 2014. Fetal exposure to perfluorinated compounds and attention deficit hyperactivity disorder in childhood. PLoS ONE 9(4):e95891. 10.1371/journal.pone.0095891.
- Ode A, Rylander L, Lindh CH, et al. 2013. Determinants of maternal and fetal exposure and temporal trends of perfluorinated compounds. Environ Sci Pollut Res Int 20(11):7970-7978.

- OECD. 2002. Hazard assessment of perfluorooctane sulfonate (PFOS) and its salts. Organisation for Economic Co-operation and Development. ENV/JM/RD(2002)17/FINAL. http://www.oecd.org/dataoecd/23/18/2382880.pdf. July 02, 2007.
- OECD. 2006a. Results of the 2006 survey on production and use of PFOS, PFAS, PFOA, PFCA, their related substances and products/mixtures containing these substances. Organisation for Economic Co-operation and Development.
- OECD. 2006b. SIDS initial assessment report after SIAM 22. Ammonium perfluorooctanoate and perfluorooctanoic acid. Organisation for Economic Co-operation and Development. http://www.oecd.org/document/63/0,3343,en_2649_34379_1897983_1_1_1_1_1,00.html. May 18, 2009.
- OECD. 2007. Report of an OECD workshop on perfluorocarboxylic acids (PFCAs) and precursors. Organisation for Economic Co-operation and Development. http://www.olis.oecd.org/olis/2007doc.nsf/LinkTo/NT00002AB6/\$FILE/JT03229256.PDF. April 02, 2008.
- Ohmori K, Kudo N, Katayama K, et al. 2003. Comparison of the toxicokinetics between perfluorocarboxylic acids with different carbon chain length. Toxicology 184:135-140.
- Okada E, Sasaki S, Saijo Y, et al. 2012. Prenatal exposure to perfluorinated chemicals and relationship with allergies and infectious diseases in infants. Environ Res 112:118-125.
- Okada E, Sasaki S, Kashino I, et al. 2014. Prenatal exposure to perfluoroalkyl acids and allergic diseases in early childhood. Environ Int 65:127-134. 10.1016/j.envint.2014.01.007.
- Olsen GW. 2015. PFAS biomonitoring in higher exposed populations, Chapter 4. In: Dewitt JC, ed. Toxicological effects on perfluoroalkyl and polyfluoroalkyl substances. London: Humana Press, 77-125.
- Olsen GW, Zobel LR. 2007. Assessment of lipid, hepatic, and thyroid parameters with serum perfluorooctanoate (PFOA) concentrations in fluorochemical production workers. Int Arch Occup Environ Health 81:231-246.
- Olsen GW, Burlew MM, Marshall JC, et al. 2004a. Analysis of episodes of care in a perfluorooctanesulfonyl fluoride production facility. J Occup Environ Hyg 46(8):837-846.
- Olsen GW, Burris JM, Burlew MM, et al. 2003a. Epidemiologic assessment of worker serum perfluorooctanesulfonate (PFOS) and perfluorooctanoate (PFOA) concentrations and medical surveillance examinations. J Occup Environ Med 45(3):260-270.
- Olsen GW, Burris JM, Burlew MM, et al. 2000. Plasma cholecystokinin and hepatic enzymes, cholesterol and lipoproteins in ammonium perfluorooctanoate production workers. Drug Chem Toxicol 23(4):603-620.
- Olsen GW, Burris JM, Ehresman DJ, et al. 2007a. Half-life of serum elimination of perfluorooctanesulfonate, perfluorohexanesulfonate, and perfluorooctanoate in retired fluorochemical production workers. Environ Health Perspect 115:1298-1305.
- Olsen GW, Burris JM, Mandel JH, et al. 1998a. An epidemiologic investigation of clinical chemistries, hematology and hormones in relation to serum levels of perfluorooctane sulfonate in male fluorochemical production employees. St. Paul, MN: 3M Company. AR226-0030.
- Olsen GW, Burris JM, Mandel JH, et al. 1999. Serum perfluorooctane sulfonate and hepatic and lipid clinical chemistry tests in fluorochemical production employees. J Occup Environ Med 41(9):799-806.
- Olsen GW, Chang S-C, Noker PE, et al. 2009. A comparison of the pharmacokinetics of perfluorobutanesulfonate (PFBS) in rats, monkeys, and humans. Toxicology 256:65-74.
- Olsen GW, Church TR, Hansen KJ, et al. 2004b. Quantitative evaluation of perfluorooctanesulfonate (PFOS) and other fluorochemicals in the serum of children. J Child Health 2(1):53-76.
- Olsen GW, Church TR, Larson EB, et al. 2004c. Serum concentrations of perfluorooctanesulfonate and other fluorochemicals in an elderly population from Seattle, Washington. Chemosphere 54:1599-1611.

- Olsen GW, Church TR, Miller JP, et al. 2003b. Perfluorooctanesulfonate and other fluorochemicals in the serum of American Red Cross adult blood donors. Environ Health Perspect 111:1892-1901.
- Olsen GW, Ehresman DJ, Buehrer BD, et al. 2012. Longitudinal assessment of lipid and hepatic clinical parameters in workers involved with the demolition of perfluoroalkyl manufacturing facilities. J Occup Environ Med 54(8):974-983.
- Olsen GW, Gilliland FD, Burlew MM, et al. 1998b. An epidemiologic investigation of reproductive hormones in men with occupational exposure to perfluorooctanoic acid. J Occup Environ Med 40(7):614-622.
- Olsen GW, Hansen KJ, Stevenson LA, et al. 2003c. Human donor liver and serum concentrations of perfluorooctanesulfonate and other perfluorochemicals. Environ Sci Technol 37:888-891.
- Olsen GW, Huang HY, Helzlsouer KJ, et al. 2005. Historical comparison of perfluorooctanesulfonate, perfluorooctanoate, and other fluorochemicals in human blood. Environ Health Perspect 113(5):539-545.
- Olsen GW, Mair DC, Church TR, et al. 2008. Decline in perfluorooctanesulfonate and other polyfluoroalkyl chemicals in American Red Cross adult blood donors, 2000-2006. Environ Sci Technol 42(13):4989-4995.
- Olsen GW, Mair DC, Lange CC, et al. 2017a. Per- and polyfluoroalkyl substances (PFAS) in American Red Cross adult blood donors, 2000-2015. Environ Res 157:87-95. 10.1016/j.envres.2017.05.013.
- Olsen GW, Mair DC, Lange CC, et al. 2017b. Supplemental file. Per-and polyfluoroalkyl substances (PFAS) in American Red Cross adult blood donors, 2000-2015 [Environ Res 157:87-95]. Environ Res 10.1016/j.envres.2017.05.013.
- Olsen GW, Mair DC, Reagan WK, et al. 2007b. Preliminary evidence of a decline in perfluorooctanesulfonate (PFOS) and perfluorooctanoate (PFOA) concentrations in American Red Cross blood donors. Chemosphere 68(1):105-111.
- +Onishchenko N, Fischer C, Wan Ibrahim WN, et al. 2011. Prenatal exposure to PFOS or PFOA alters motor function in mice in a sex-related manner. Neurotox Res 19(3):452-461.
- Orata F, Quinete N, Werres F, et al. 2009. Determination of perfluorooctanoic acid and perfluorooctane sulfonate in Lake Victoria Gulf water. Bull Environ Contam Toxicol 82:218-222.
- OSHA. 2018a. Occupational safety and health standards for shipyard employment. Subpart Z Toxic and hazardous substances. Air contaminants. Code of Federal Regulations 29 CFR 1915.1000. Occupational Safety and Health Administration. https://www.osha.gov/laws-regs/regulations/standardnumber/1915/1915.1000. November 1, 2018.
- OSHA. 2018b. Occupational safety and health standards. Subpart Z Toxic and hazardous substances. Air contaminants. Table Z-1: Limits for air contaminants. Code of Federal Regulations 29 CFR 1910.1000. Occupational Safety and Health Administration. https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1000TABLEZ1. November 28, 2018.
- OSHA. 2018c. Safety and health regulations for construction. Subpart D Occupational health and environment controls. Gases, vapors, fumes, dusts, and mists. Code of Federal Regulations 29 CFR 1926.55, Appendix A. Occupational Safety and Health Administration. https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.55AppA. November 1, 2018.
- Osuna CE, Grandjean P, Weihe P, et al. 2014. Autoantibodies associated with prenatal and childhood exposure to environmental chemicals in Faroese children. Toxicol Sci 142(1):158-166. 10.1093/toxsci/kfu163.
- Oulhote Y, Steuerwald U, Debes F, et al. 2016. Behavioral difficulties in 7-year old children in relation to developmental exposure to perfluorinated alkyl substances. Environ Int 97:237-245. http://doi.org/10.1016/j.envint.2016.09.015.
- Pan Y, Zhang H, Coi Q, et al. 2018. Worldwide distribution of novel perfluoroether carboxylic and sulfonic acids in surface water. Environ Sci Technol 52:7621-7629.
- +Pastoor TP, Lee KP, Perri MA, et al. 1987. Biochemical and morphological studies of ammonium perfluorooctanoate-induced hepatomegaly and peroxisome proliferation. Exp Mol Pathol 47(1):98-109.

- Paustenbach DJ, Panko JM, Scott PK, et al. 2007. A methodology for estimating human exposure to perfluorooctanoic acid (PFOA): A retrospective exposure assessment of a community (1951-2003). J Toxicol Environ Health A 70(1):28-57.
- +Peden-Adams MM, Keller JM, Eudaly JG, et al. 2008. Suppression of humoral immunity in mice following exposure to perfluorooctane sulfonate. Toxicol Sci 104(1):144-154.
- +Pereiro N, Moyano R, Blanco A, et al. 2014. Regulation of corticosterone secretion is modified by PFOS exposure at different levels of the hypothalamic-pituitary-adrenal axis in adult male rats. Toxicol Lett 230(2):252-262. 10.1016/j.toxlet.2014.01.003.
- Perez F, Nadal M, Navarro-Ortega A, et al. 2013. Accumulation of perfluoroalkyl substances in human tissues. Environ Int 59:354-362. 10.1016/j.envint.2013.06.004.
- +Perkins RG, Butenhoff JL, Kennedy GL, et al. 2004. 13-Week dietary toxicity study of ammonium perfluorooctanoate (APFO) in male rats. Drug Chem Toxicol 27(4):361-378.
- +Permadi H, Lundgren B, Andersson K, et al. 1992. Effects of perfluoro fatty acids on xenobiotic-metabolizing enzymes, enzymes which detoxify reactive forms of oxygen and lipid peroxidation in mouse liver. Biochem Pharmacol 44(6):1183-1191.
- +Permadi H, Lundgren B, Andersson K, et al. 1993. Effects of perfluoro fatty acids on peroxisome proliferation and mitochondrial size in mouse liver: Dose and time factors and effect of chain length. Xenobiotica 23(7):761-770.
- Peters JM, Gonzalez FJ. 2011. Why toxic equivalency factors are not suitable for perfluoroalkyl chemicals. American Chemical Society. Chem Res Toxicol 24(10):1601-1609. 10.1021/tx200316x.
- Pinney SM, Biro FM, Windham GC, et al. 2014. Serum biomarkers of polyfluoroalkyl compound exposure in young girls in Greater Cincinnati and the San Francisco Bay Area, USA. Environ Pollut 184:327-334. 10.1016/j.envpol.2013.09.008.
- Plastics Europe. 2012. Guide for the safe handling of fluoropolymer resins, November 2012. Plastics Europe, Association of Plastics Manufacturers. https://www.plasticseurope.org/en/resources/publications/108-guide-safe-handling-fluoropolymer-resins.
- Porpora MG, Lucchini R, Abballe A, et al. 2013. Placental transfer of persistent organic pollutants: A preliminary study on mother-newborn pairs. Int J Environ Res Public Health 10(2):699-711.
- Post GB, Cohn PD, Cooper KR. 2012. Perfluorooctanoic acid (PFOA), an emerging drinking water contaminant: A critical review of recent literature. Environ Res 116:93-117.
- Post GB, Louis JB, Cooper KR, et al. 2009. Occurrence and potential significance of perfluorooctanoic acid (PFOA) detected in New Jersey public drinking water systems. Environ Sci Technol 43(12):4547-4554.
- Post GB, Louis JB, Lippincott RL, et al. 2013. Occurrence of perfluorinated compounds in raw water from New Jersey public drinking water systems. Environ Sci Technol 47(23):13266-13275. 10.1021/es402884x.
- Power MC, Webster TF, Baccarelli AA, et al. 2013. Cross-sectional association between polyfluoroalkyl chemicals and cognitive limitation in the National Health and Nutrition Examination Survey. Neuroepidemiology 40(2):125-132.
- Powley CR, George SW, Russell MH, et al. 2008. Polyfluorinated chemicals in a spatially and temporally integrated food web in the Western Arctic. Chemosphere 70:664-672.
- Powley CR, Michalczyk MJ, Kaiser MA, et al. 2005. Determination of perfluorooctanoic acid (PFOA) extractable from the surface of commercial cookware under simulated cooking conditions by LC/MS/MS. Analyst 130(9):1299-1302.
- Predieri B, Iughetti L, Guerranti C, et al. 2015. High levels of perfluorooctane sulfonate in children at the onset of diabetes. Int J Endocrinol 2015:234358. 10.1155/2015/234358.

- Preston EV, Webster TF, Oken E, et al. 2018. Maternal plasma per- and polyfluoroalkyl substance concentrations in early pregnancy and maternal and neonatal thyroid function in a prospective birth cohort: Project Viva (USA). Environ Health Perspect 126(2):027013. http://doi.org/10.1289/EHP2534.
- Prevedouros K, Cousins I T, Buck RC, et al. 2006. Sources, fate and transport of perfluorocarboxylates. Environ Sci Technol 40(1):32-44.
- +Qazi MR, Abedi MR, Nelson BD, et al. 2010a. Dietary exposure to perfluorooctanoate or perfluorooctane sulfonate induces hypertrophy in centrilobular hepatocytes and alters the hepatic immune status in mice. Int Immunopharmacol 10(11):1420-1427.
- Qazi MR, Bogdanska J, Butenhoff JL, et al. 2009a. High-dose, short-term exposure of mice to perfluorooctanesulfonate (PFOS) or perfluorooctanoate (PFOA) affects the number of circulating neutrophils differently, but enhances the inflammatory responses of macrophages to lipopolysaccharide (LPS) in a similar fashion. Toxicology 262(3):207-214.
- Qazi MR, Hassan M, Nelson BD, et al. 2013. Sub-acute, moderate-dose, but not short-term, low-dose dietary pre-exposure of mice to perfluorooctanoate aggravates concanavalin A-induced hepatitis. Toxicol Lett 219(1):1-7. http://doi.org/10.1016/j.toxlet.2013.02.017.
- +Qazi MR, Nelson BD, Depierre JW, et al. 2010b. 28-Day dietary exposure of mice to a low total dose (7 mg/kg) of perfluorooctanesulfonate (PFOS) alters neither the cellular compositions of the thymus and spleen nor humoral immune responses: Does the route of administration play a pivotal role in PFOS-induced immunotoxicity? Toxicology 267(1-3):132-139. 10.1016/j.tox.2009.10.035.
- Qazi MR, Nelson BD, DePierre JW, et al. 2012. High-dose dietary exposure of mice to perfluorooctanoate or perfluorooctane sulfonate exerts toxic effects on myeloid and B-lymphoid cells in the bone marrow and these effects are partially dependent on reduced food consumption. Food Chem Toxicol 50(9):2955-2963.
- Qazi MR, Xia Z, Bogdanska J, et al. 2009b. The atrophy and changes in the cellular compositions of the thymus and spleen observed in mice subjected to short-term exposure to perfluorooctanesulfonate are high-dose phenomena mediated in part by peroxisome proliferator-activated receptor-alpha (PPARα). Toxicology 260(1-3):68-76.
- Qin XD, Qian ZM, Dharmage SC, et al. 2017. Association of perfluoroalkyl substances exposure with impaired lung function in children. Environ Res 155:15-21. http://doi.org/10.1016/j.envres.2017.01.025.
- Qin XD, Qian Z, Vaughn MG, et al. 2016. Positive associations of serum perfluoroalkyl substances with uric acid and hyperuricemia in children from Taiwan. Environ Pollut 212:519-524. 10.1016/j.envpol.2016.02.050.
- +Qu JH, Lu CC, Xu C, et al. 2016. Perfluorooctane sulfonate-induced testicular toxicity and differential testicular expression of estrogen receptor in male mice. Environ Toxicol Pharmacol 45:150-157. http://doi.org/10.1016/j.etap.2016.05.025.
- Quaak I, de Cock M, de Boer M, et al. 2016. Prenatal exposure to perfluoroalkyl substances and behavioral development in children. Int J Environ Res Public Health 13(5). 10.3390/ijerph13050511.
- Quinete N, Wu Q, Zhang T, et al. 2009. Specific profiles of perfluorinated compounds in surface and drinking waters and accumulation in mussels, fish, and dolphins from southeastern Brazil. Chemosphere 77(6):863-869. 10.1016/j.chemosphere.2009.07.079.
- Quinones O, Snyder SA. 2009. Occurrence of perfluoroalkyl carboxylates and sulfonates in drinking water utilities and related waters from the United States. Environ Sci Technol 43(24):9089-9095.
- +Quist EM, Filgo AJ, Cummings CA, et al. 2015a. Hepatic mitochondrial alteration in CD-1 mice associated with prenatal exposures to low doses of perfluorooctanoic acid (PFOA). Toxicol Pathol 43(4):546-557. 10.1177/0192623314551841.
- +Quist EM, Filgo AJ, Cummings CA, et al. 2015b. Supplemental data: Hepatic mitochondrial alteration in CD-1 mice associated with prenatal exposures to low doses of perfluorooctanoic acid (PFOA). (Toxicol Pathol 43(4):546-557). Toxicol Pathol 43:546-557.

- Rahman MF, Peldszus S, Anderson WB. 2014. Behaviour and fate of perfluoroalkyl and polyfluoroalkyl substances (PFAS) in drinking water treatment: A review. Water Res 50:318-340.
- Raleigh KK, Alexander BH, Olsen GW, et al. 2014. Mortality and cancer incidence in ammonium perfluorooctanoate production workers. Occup Environ Med 71(7):500-506. 10.1136/oemed-2014-102109.
- +Ramhoj L, Hass U, Boberg J, et al. 2018. Perfluorohexane sulfonate (PFHxS) and a mixture of endocrine disrupters reduce thyroxine levels and cause antiandrogenic effects in rats. Toxicol Sci 163(2):579-591.
- Rankin K, Lee H, Tseng PJ, et al. 2014. Investigating the biodegradability of a fluorotelomer-based acrylate polymer in a soil-plant microcosm by indirect and direct analysis. Environ Sci Technol 48(21):12783-12790.
- Raymer JH, Michael LC, Studabaker WB, et al. 2012. Concentrations of perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) and their associations with human semen quality measurements. Reprod Toxicol 33(4):419-427.
- +Rebholz SL, Jones T, Herrick RL, et al. 2016. Hypercholesterolemia with consumption of PFOA-laced Western diets is dependent on strain and sex of mice. Toxicol Rep 3:46-54. 10.1016/j.toxrep.2015.11.004.
- Reiner JL, Nakayama SF, Delinsky AD, et al. 2009. Analysis of PFOA in dosed CD1 mice. Part 1. Methods development for the analysis of tissues and fluids from pregnant and lactating mice and their pups. Reprod Toxicol 27(3-4):360-364. 10.1016/j.reprotox.2008.10.006.
- Ren H, Vallanat B, Nelson DM, et al. 2009. Evidence for the involvement of xenobiotic-responsive nuclear receptors in transcriptional effects upon perfluoroalkyl acid exposure in diverse species. Reprod Toxicol 27(3-4):266-277. 10.1016/j.reprotox.2008.12.011.
- Ribes D, Fuentes S, Torrente M, et al. 2010. Combined effects of perfluorooctane sulfonate (PFOS) and maternal restraint stress on hypothalamus adrenal axis (HPA) function in the offspring of mice. Toxicol Appl Pharmacol 243(1):13-18.
- Robledo CA, Yeung E, Mendola P, et al. 2015a. Preconception maternal and paternal exposure to persistent organic pollutants and birth size: The LIFE study. Environ Health Perspect 123(1):88-94. 10.1289/ehp.1308016.
- Robledo CA, Yeung E, Mendola P, et al. 2015b. Supplemental material to preconception maternal and paternal exposure to persistent organic pollutants and birth size: The LIFE study. [Environ Health Perspect 123(1):88-94]. Environ Health Perspect 10.1289/ehp.1308016.
- Rockwell CE, Turley AE, Cheng X, et al. 2013. Acute immunotoxic effects of perfluorononanoic acid (PFNA) in C57BL/6 Mice. Clin Exp Pharmacol Suppl 4. 10.4172/2161-1459.S4-002. http://www.ncbi.nlm.nih.gov/pubmed/25568816.
- Rockwell CE, Turley AE, Cheng X, et al. 2017. Persistent alterations in immune cell populations and function from a single dose of perfluorononanoic acid (PFNA) in C57B1/6 mice. Food Chem Toxicol 100:24-33.
- Rodriguez CE, Setzer RW, Barton HA. 2009. Pharmacokinetic modeling of perfluorooctanoic acid during gestation and lactation in the mouse. Reprod Toxicol 27(3-4):373-386.
- +Rogers JM, Ellis-Hutchings RG, Grey BE, et al. 2014. Elevated blood pressure in offspring of rats exposed to diverse chemicals during pregnancy. Toxicol Sci 137(2):436-446. 10.1093/toxsci/kft248.
- Romano ME, Xu Y, Calafat AM, et al. 2016. Maternal serum perfluoroalkyl substances during pregnancy and duration of breastfeeding. Environ Res 10.1016/j.envres.2016.04.034.
- Rosen MB, Abbott BD, Wolf DC, et al. 2008a. Gene profiling in the livers of wild-type and PPARα-null mice exposed to perfluorooctanoic acid. Toxicol Pathol 36(4):592-607.
- Rosen MB, Das KP, Rooney J, et al. 2017. PPARα-independent transcriptional targets of perfluoroalkyl acids revealed by transcript profiling. Toxicology 387:97-107.

- Rosen MB, Lee JS, Ren H, et al. 2008b. Toxicogenomic dissection of the perfluorooctanoic acid transcript profile in mouse liver: Evidence for the involvement of nuclear receptors PPARα and CAR. Toxicol Sci 103(1):46-56.
- Rosen MB, Schmid JR, Corton JC, et al. 2010. Gene expression profiling in wild-type and PPARα-null mice exposed to perfluorooctane sulfonate reveals PPARα-independent effects. PPAR Res 10.1155/2010/794739.
- +Rosen MB, Schmid JE, Das KP, et al. 2009. Gene expression profiling in the liver and lung of perfluorooctane sulfonate-exposed mouse fetuses: Comparison to changes induced by exposure to perfluorooctanoic acid. Reprod Toxicol 27:278-288.
- Rosen MB, Thibodeaux JR, Wood CR, et al. 2007. Gene expression profiling in the lung and liver of PFOA-exposed mouse fetuses. Toxicology 239:15-33.
- Rotander A, Toms LM, Aylward L, et al. 2015. Elevated levels of PFOS and PFHxS in firefighters exposed to aqueous film forming foam (AFFF). Environ Int 82:28-34. 10.1016/j.envint.2015.05.005.
- RTECS. 2008. Perfluoroalkyls. Hamilton, Ontario: Registry of Toxic Effects on Chemical Substances. Canadian Centre for Occupational Health and Safety. Symyx Software, Inc. May 29, 2008.
- Ruark CD, Song G, Yoon M, et al. 2017. Quantitative bias analysis for epidemiological associations of perfluoroalkyl substance serum concentrations and early onset of menopause. Environ Int 99:245-254
- Rumsby PC, McLaughlin CL, Hall T. 2009. Perfluorooctane sulphonate and perfluorooctanoic acid in drinking and environmental waters. Philos Trans A Math Phys Eng Sci 367(1904):4119-4136. 10.1098/rsta.2009.0109.
- Ryu MH, Jha A, Ojo OO, et al. 2014. Chronic exposure to perfluorinated compounds: Impact on airway hyperresponsiveness and inflammation. Am J Physiol Lung Cell Mol Physiol 307(10):L765-L774.
- Sagiv SK, Rifas-Shiman SL, Fleisch AF, et al. 2018. Early-pregnancy plasma concentrations of perfluoroalkyl substances and birth outcomes in Project Viva: Confounded by pregnancy hemodynamics? Am J Epidemiol 187(4):793-802.
- Sakr CJ, Kreckmann KH, Green JW, et al. 2007b. Cross-sectional study of lipids and liver enzymes related to a serum biomarker of exposure (ammonium perfluorooctanoate or APFO) as part of a general health survey in a cohort of occupationally exposed workers. J Occup Environ Med 49:1086-1096.
- Sakr CJ, Leonard RC, Kreckmann KH, et al. 2007a. Longitudinal study of serum lipids and liver enzymes in workers with occupational exposure to ammonium perfluorooctanoate. J Occup Environ Med 49:872-879.
- Sakr CJ, Symons JM, Kreckmann KH, et al. 2009. Ischaemic heart disease mortality study among workers with occupational exposure to ammonium perfluorooctanoate. Occup Environ Med 66:699-703.
- +Salgado R, Pereiro N, Lopez-Doval S, et al. 2015. Initial study on the possible mechanisms involved in the effects of high doses of perfluorooctane sulfonate (PFOS) on prolactin secretion. Food Chem Toxicol 83:10-16. 10.1016/j.fct.2015.05.013.
- Salvalaglio M, Muscionico I, Cavallotti C. 2010. Determination of energies and sites of binding of PFOA and PFOS to human serum albumin. J Phys Chem B 114(46):14860-14874.
- Sato I, Kawamoto K, Nishikawa Y, et al. 2009. Neurotoxicity of perfluorooctane sulfonate (PFOS) in rats and mice after single oral exposure. J Toxicol Sci 34(5):569-574.
- Savitz DA, Stein CR, Bartell SM, et al. 2012a. Perfluorooctanoic acid exposure and pregnancy outcome in a highly exposed community. Epidemiology 23(3):386-392.
- Savitz DA, Stein CR, Elston B, et al. 2012b. Relationship of perfluorooctanoic acid exposure to pregnancy outcome based on birth records in the Mid-Ohio Valley. Environ Health Perspect 120(8):1201-1207.

- Savu PM. 1994a. Fluorinated higher carboxylic acids. In: Kirk-Othmer encyclopedia of chemical technology. John Wiley & Sons, Inc., 1-7. http://mrw.interscience.wiley.com/emrw/9780471238966/kirk/article/fluosavu.a01/current/pdf. April 01, 2008.
- Savu P. 1994b. Fluorine-containing polymers, perfluoroalkanesulfonic acids. In: Kirk-Othmer encyclopedia of chemical technology. John Wiley & Sons, Inc., 1-7. http://mrw.interscience.wiley.com/emrw/9780471238966/kirk/article/perfsavu.a01.current/pdf. April 01, 2008.
- Schaider LA, Balan SA, Blum A, et al. 2017. Fluorinated compounds in U.S. fast food packaging. Environ Sci Tech Lett 4(3):105-111. 10.1021/acs.estlett.6b00435.
- Schecter A, Colacino J, Haffner D, et al. 2010. Perfluorinated compounds, polychlorinated biphenyls, and organochlorine pesticide contamination in composite food samples from Dallas, Texas, USA. Environ Health Perspect 118(6):796-802.
- Schultz MM, Barofsky DF, Field JA. 2003. Fluorinated alkyl surfactants. Environ Eng Sci 20(5):487-501
- Schultz MM, Barofsky DF, Field JA. 2006a. Quantitative determination of fluorinated alkyl substances by large-volume-injection liquid chromatography tandem mass spectrometry. Characterization of municipal wastewaters. Environ Sci Technol 40:289-295.
- Schultz MM, Higgins CP, Huset CA, et al. 2006b. Fluorochemical mass flows in a municipal wastewater treatment facility. Environ Sci Technol 40(23):7350-7367.
- +Seacat AM, Luebker DJ. 2000. Toxicokinetic study of perfluorooctane sulfonamide (PFOS; T-7132.2) in rats. 3M Strategic Toxicology Laboratory. Submitted to the U.S. Environmental Protection Agency's Administrative Record. AR226-1030A011.
- +Seacat AM, Thomford PJ, Hansen KJ, et al. 2002. Subchronic toxicity studies on perfluorooctanesulfonate potassium salt in Cynomolgus monkeys. Toxicol Sci 68(1):249-264.
- +Seacat AM, Thomford PJ, Hansen KJ, et al. 2003. Sub-chronic dietary toxicity of potassium perfluorooctanesulfonate in rats. (Erratum in: Toxicology 2003 192(2-3):263-264). Toxicology 183(1-3):117-133.
- Seals R, Bartell SM, Steenland K. 2011. Accumulation and clearance of perfluorooctanoic acid (PFOA) in current and former residents of an exposed community. Environ Health Perspect 119(1):119-124.
- Sepulvado JG, Blaine AC, Hundal LS, et al. 2011. Occurrence and fate of perfluorochemicals in soil following the land application of municipal biosolids. Environ Sci Technol 45(19):8106-8112. 10.1021/es103903d.
- Shah-Kulkarni S, Kim BM, Hong YC, et al. 2016. Prenatal exposure to perfluorinated compounds affects thyroid hormone levels in newborn girls. Environ Int 94:607-613. http://doi.org/10.1016/j.envint.2016.06.024.
- Shankar A, Xiao J, Ducatman A. 2011a. Perfluoroalkyl chemicals and chronic kidney disease in US adults. Am J Epidemiol 174(8):893-900.
- Shankar A, Xiao J, Ducatman A. 2011b. Perfluoroalkyl chemicals and elevated serum uric acid in US adults. Clin Epidemiol 3:251-258.
- Shankar A, Xiao J, Ducatman A. 2012. Perfluorooctanoic acid and cardiovascular disease in US adults. Arch Intern Med 172(18):1397-1403.
- Shapiro GD, Dodds L, Arbuckle TE, et al. 2016. Exposure to organophosphorus and organochlorine pesticides, perfluoroalkyl substances, and polychlorinated biphenyls in pregnancy and the association with impaired glucose tolerance and gestational diabetes mellitus: The MIREC Study. Environ Res 147:71-81. 10.1016/j.envres.2016.01.040.
- Shi Y, Vestergren R, Zhou Z, et al. 2015. Tissue distribution and whole body burden of the chlorinated polyfluoroalkyl ether sulfonic acid F-53B in crucian carp (*Carassius carassius*): Evidence for a highly bioaccumulative contaminant of emerging concern. Environ Sci Technol 49(24):14156-14165. http://doi.org/10.1021/acs.est.5b04299.

- Shi Y, Yang L, Li J, et al. 2017. Occurrence of perfluoroalkyl substances in cord serum and association with growth indicators in newborns from Beijing. Chemosphere 169:396-402. http://doi.org/10.1016/j.chemosphere.2016.11.050.
- +Shi Z, Ding L, Zhang H, et al. 2009a. Chronic exposure to perfluorododecanoic acid disrupts testicular steroidogenesis and the expression of related genes in male rats. Toxicol Lett 188(3):192-200. http://doi.org/10.1016/j.toxlet.2009.04.014.
- +Shi Z, Zhang H, Ding L, et al. 2009b. The effect of perfluorododecanoic acid on endocrine status, sex hormones and expression of steroidogenic genes in pubertal female rats. Reprod Toxicol 27(3-4):352-359.
- +Shi Z, Zhang H, Liu Y, et al. 2007. Alterations in gene expression and testosterone synthesis in the testes of male rats exposed to perfluorododecanoic acid. Toxicol Sci 98(1):206-215.
- Shin HM, Vieira VM, Ryan PB, et al. 2011a. Environmental fate and transport modeling for perfluorooctanoic acid emitted from the Washington Works Facility in West Virginia. Environ Sci Technol 45(4):1435-1442.
- Shin HM, Vieira VM, Ryan PB, et al. 2011b. Retrospective exposure estimation and predicted versus observed serum perfluorooctanoic acid concentrations for participants in the C8 Health Project. Environ Health Perspect 119(12):1760-1765. http://doi.org/10.1289/ehp.1103729.
- Shipley JM, Hurst CH, Tanaka SS, et al. 2004. *trans*-Activation of PPAR(beta) and induction of PPAR(beta) target genes by perfluorooctane-based chemicals. Toxicol Sci 80(1):151-160.
- Shoeib M, Harner T, Ikonomou M, et al. 2004. Indoor and outdoor air concentrations and phase partitioning of perfluoroalkyl sulfonamides and polybrominated diphenyl ethers. Environ Sci Technol 38:1313-1320.
- Shoeib M, Harner T, Vlahos P. 2006. Perfluorinated chemicals in the arctic atmosphere. Environ Sci Technol 40:7577-7583.
- Shrestha S, Bloom MS, Yucel R, et al. 2015. Perfluoroalkyl substances and thyroid function in older adults. Environ Int 75:206-214. 10.1016/j.envint.2014.11.018.
- Shrestha S, Bloom MS, Yucel R, et al. 2017. Perfluoroalkyl substances, thyroid hormones, and neuropsychological status in older adults. Int J Hyg Environ Health 220(4):679-685. http://doi.org/10.1016/j.ijheh.2016.12.013.
- Siegemund G, Schwertfeger W, Feiring A, et al. 2005. Fluorine compounds, organic. Ullmann's Encyclopedia of Industrial Chemistry. Wiley-VCH Verlag GmbH & Co. http://mrw.interscience.wiley.com/emrw/9783527306732/ueic/article/a11_349/current/abstract. April 01, 2008.
- Siegemund G, Schwertfeger W, Feiring A, et al. 2015. Fluorine compounds, organic. Ullmann's Encyclopedia of Industrial Chemistry. Wiley-VCH Verlag GmbH & Co.
- Simcik MF. 2005. Global transport and fate of perfluorochemicals. J Environ Monit 7:759-763.
- Simcik MF, Dorweiler KJ. 2005. Ratio of perfluorochemical concentrations as a tracer of atmospheric deposition to surface waters. Environ Sci Technol 39:8678-8683.
- Simpson C, Winquist A, Lally C, et al. 2013. Relation between perfluorooctanoic acid exposure and strokes in a large cohort living near a chemical plant. Environ Res 127:22-28. 10.1016/j.envres.2013.10.002.
- Sinclair E, Kannan K. 2006. Mass loading and fate of perfluoroalkyl surfactants in wastewater treatment plants. Environ Sci Technol 40(5):1408-1414.
- Sinclair E, Kim SK, Akinleye HB, et al. 2007. Quantitation of gas-phase perfluoroalkyl surfactants and fluorotelomer alcohols released from nonstick cookware and microwave popcorn bags. Environ Sci Technol 41:1180-1185.
- Sinclair E, Mayack DT, Roblee K, et al. 2006. Occurrence of perfluoroalkyl surfactants in water, fish, and birds from New York State. Arch Environ Contam Toxicol 50:398-401.
- Sinclair E, Taniyasu S, Yamashita N, et al. 2004. Perfluorooctanoic acid and perfluorooctane sulfonate in Michigan and New York waters. Organohalogen Compounds 66:4069-4073.

- +Singh S, Singh SK. 2018. Chronic exposure to perfluorononanoic acid impairs spermatogenesis, steroidogenesis and fertility in male mice. J Appl Toxicol 1-12. http://doi.org/10.1002/jat.3733.
- Skuladottir M, Ramel A, Rytter D, et al. 2015. Examining confounding by diet in the association between perfluoroalkyl acids and serum cholesterol in pregnancy. Environ Res 143(Pt A):33-38. 10.1016/j.envres.2015.09.001.
- Small MJ. 2009. Final report of the peer consultation panel conducting the review for the scientific peer consultation process for a site environmental assessment program as part of the Dupont-EPA memorandum of understanding and Phase II Workplan. Pittsburgh, PA: Carnegie Mellon University, Civil and Environmental Engineering and Engineering and Public Policy.
- Smit LA, Lenters V, Hoyer BB, et al. 2015. Prenatal exposure to environmental chemical contaminants and asthma and eczema in school-age children. Allergy 70(6):653-660. 10.1111/all.12605.
- Smithwick M, Mabury SA, Solomon KR, et al. 2005a. Circumpolar study of perfluoroalkyl contaminants in polar bears (*Ursus maritimus*). Environ Sci Technol 39(15):5517-5523.
- Smithwick M, Muir DC, Mabury SA, et al. 2005b. Perfluoroalkyl contaminants in liver tissue from East Greenland polar bears (*Ursus maritimus*). Environ Toxicol Chem 24(4):981-986.
- Smithwick M, Norstrom RJ, Mabury SA, et al. 2006. Temporal trends of perfluoroalkyl contaminants in polar bears (*Ursus maritimus*) from two locations in the North American arctic, 1972-2002. Environ Sci Technol 40:1139-1143.
- So MK, Taniyasu S, Lam PKS, et al. 2006a. Alkaline digestion and solid phase extraction method for perfluorinated compounds in mussels and oysters from South China and Japan. Arch Environ Contam Toxicol 50:240-248.
- So MK, Yamashita N, Taniyasu S, et al. 2006b. Health risks in infants associated with exposure to perfluorinated compounds in human breast milk from Zhoushan, China. Environ Sci Technol 40:2924-2929.
- +Sobolewski M, Conrad K, Allen JL, et al. 2014. Sex-specific enhanced behavioral toxicity induced by maternal exposure to a mixture of low dose endocrine-disrupting chemicals. Neurotoxicology 45:121-130. 10.1016/j.neuro.2014.09.008.
- +Son H, Kim S, Shin HI, et al. 2008. Perfluorooctanoic acid-induced hepatic toxicity following 21-day oral exposure in mice. Arch Toxicol 82:239-246.
- +Son HY, Lee S, Tak EN, et al. 2009. Perfluorooctanoic acid alters T lymphocyte phenotypes and cytokine expression in mice. Environ Toxicol 24(6):580-588.
- SPARC. 2008. Macroscopic pKa. Sparc Performs Automated Reasoning in Chemistry. http://sparc.chem.ugs.edu/sparc/display/ShowMacro.cfm. May 08, 2008.
- Specht IO, Hougaard KS, Spano D, et al. 2012. Sperm DNA integrity in relation to exposure to environmental perfluoroalkyl substances. A study of spouses of pregnant women in three geographical regions. Reprod Toxicol 33:577-583.
- Spliethoff HM, Tao L, Shaver SM, et al. 2008. Use of newborn screening program blood spots for exposure assessment: Declining levels of perfluorinated compounds in New York State infants. Environ Sci Technol 42(14):5361-5367.
- Staels B, Dallongeville J, Auwerx J, et al. 1998. Mechanism of action of fibrates on lipid and lipoprotein metabolism. Circulation 98:2088-2093.
- Stahl T, Heyn J, Thiele H, et al. 2009. Carryover of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) from soil to plants. Arch Environ Contam Toxicol 57(2):289-298. http://doi.org/10.1007/s00244-008-9272-9.
- Stahl T, Riebe RA, Falk S, et al. 2013. Long-term lysimeter experiment to investigate the leaching of perfluoroalkyl substances (PFASs) and the carry-over from soil to plants: Results of a pilot study. J Agric Food Chem 61(8):1784-1793. http://doi.org/10.1021/jf305003h.
- +Staples RE, Burgess BA, Kerns WD. 1984. The embryo-fetal toxicity and teratogenic potential of ammonium perfluorooctanoate (APFO) in the rat. Fundam Appl Toxicol 4:429-440.
- Starkov AA, Wallace KB. 2002. Structural determinants of fluorochemical-induced mitochondrial dysfunction. Toxicol Sci 66(2):244-252.

- Starling AP, Adgate JL, Hamman RF, et al. 2017. Perfluoroalkyl substances during pregnancy and offspring weight and adiposity at birth: Examining mediation by maternal fasting glucose in the Healthy Start Study. Environ Health Perspect 125(6):067016. http://doi.org/10.1289/ehp641.
- Starling AP, Engel SM, Richardson DB, et al. 2014b. Perfluoroalkyl substances during pregnancy and validated preeclampsia among nulliparous women in the Norwegian Mother and Child Cohort Study. Am J Epidemiol 179(7):824-833. 10.1093/aje/kwt432.
- Starling AP, Engel SM, Whitworth KW, et al. 2014a. Perfluoroalkyl substances and lipid concentrations in plasma during pregnancy among women in the Norwegian Mother and Child Cohort Study. Environ Int 62:104-112. 10.1016/j.envint.2013.10.004.
- Stasinakis AS, Petalas AV, Mamais D, et al. 2008. Application of the OECD 301F respirometric test for the biodegradability assessment of various potential endocrine disrupting chemicals. Bioresour Technol 99:3458-3467.
- Steenland K, Woskie S. 2012. Cohort mortality study of workers exposed to perfluorooctanoic acid. Am J Epidemiol 176(10):909-917.
- Steenland K, Barry V, Savitz D. 2018. Serum perfluorooctanoic acid and birthweight. An updated metaanalysis with bias analysis. Epidemiology 29:765-776.
- Steenland K, Fletcher T, Savitz DA. 2010a. Epidemiologic evidence on the health effects of perfluorooctanoic acid (PFOA). Environ Health Perspect 118(8):1100-1108.
- Steenland K, Jin C, MacNeil J, et al. 2009a. Predictors of PFOA levels in a community surrounding a chemical plant. Environ Health Perspect 117(7):1083-1088.
- Steenland K, Tinker S, Frisbee S, et al. 2009b. Association of perfluorooctanoic acid and perfluorooctane sulfonate with serum lipids among adults living near a chemical plant. Am J Epidemiol 170(10):1268-1278.
- Steenland K, Tinker S, Shankar A, et al. 2010b. Association of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) with uric acid among adults with elevated community exposure to PFOA. Environ Health Perspect 118(2):229-233.
- Steenland K, Zhao L, Winquist A, et al. 2013. Ulcerative colitis and perfluorooctanoic acid (PFOA) in a highly exposed population of community residents and workers in the Mid-Ohio Valley. Environ Health Perspect 121(8):900-905.
- Steenland K, Zhao L, Winquist A. 2015. A cohort incidence study of workers exposed to perfluorooctanoic acid (PFOA). Occup Environ Med 72(5):373-380. 10.1136/oemed-2014-102364.
- Stein CR, Savitz DA. 2011. Serum perfluorinated compound concentration and attention deficit/hyperactivity disorder in children 5-18 years of age. Environ Health Perspect 119(10):1466-1471.
- Stein CR, McGovern KJ, Pajak AM, et al. 2016a. Perfluoroalkyl and polyfluoroalkyl substances and indicators of immune function in children aged 12-19 y: National Health and Nutrition Examination Survey. Pediatr Res 79(2):348-357. 10.1038/pr.2015.213.
- Stein CR, Ge Y, Wolff MS, et al. 2016b. Perfluoroalkyl substance serum concentrations and immune response to FluMist vaccination among healthy adults. Environ Res 149:171-178. 10.1016/j.envres.2016.05.020.
- Stein CR, Savitz DA, Bellinger DC. 2013. Perfluorooctanoate and neuropsychological outcomes in children. Epidemiology 24(4):590-599.
- Stein CR, Savitz DA, Bellinger DC. 2014a. Perfluorooctanoate exposure in a highly exposed community and parent and teacher reports of behaviour in 6-12-year-old children. Paediatr Perinat Epidemiol 28(2):146-156. 10.1111/ppe.12097.
- Stein CR, Savitz DA, Bellinger DC. 2014b. Supporting information to perfluorooctanoate exposure in a highly exposed community and parent and teacher reports of behaviour in 6-12-year-old children. Paediatr Perinat Epidemiol 10.1111/ppe.12097.
- Stein CR, Savitz DA, Elston B, et al. 2014c. Perfluorooctanoate exposure and major birth defects. Reprod Toxicol 47:15-20. 10.1016/j.reprotox.2014.04.006.

- Stein CR, Savitz DA, Dougan M. 2009. Serum levels of perfluorooctanoic acid and perfluorooctane sulfonate and pregnancy outcome. Am J Epidemiol 170(7):837-846.
- Stock NL, Lau FK, Ellis DA, et al. 2004. Polyfluorinated telomer alcohols and sulfonamides in the North American troposphere. Environ Sci Technol 38:991-996.
- Strøm M, Hansen S, Olsen SF, et al. 2014. Persistent organic pollutants measured in maternal serum and offspring neurodevelopmental outcomes--a prospective study with long-term follow-up. Environ Int 68:41-48. 10.1016/j.envint.2014.03.002.
- Strynar MJ, Lindstrom AB. 2008. Perfluorinated compounds in house dust from Ohio and North Carolina, USA. Environ Sci Technol 42:3751-3756.
- Strynar MJ, Lindstrom AB, Nakayama SF, et al. 2012. Pilot scale application of a method for the analysis of perfluorinated compounds in surface soils. Chemosphere 86:252-257.
- Su TC, Kuo CC, Hwang JJ, et al. 2016. Serum perfluorinated chemicals, glucose homeostasis and the risk of diabetes in working-aged Taiwanese adults. Environ Int 88:15-22. 10.1016/j.envint.2015.11.016.
- Suh CH, Cho NK, Lee CK, et al. 2011. Perfluorooctanoic acid-induced inhibition of placental prolactin-family hormone and fetal growth retardation in mice. Mol Cell Endocrinol 337(1-2):7-15.
- Sun Q, Zong G, Valvi D, et al. 2018. Plasma concentrations of perfluoroalkyl substances and risk of type 2 diabetes: A prospective investigation among U.S. women. Environ Health Perspect 126(3):037001. http://doi.org/10.1289/ehp2619.
- Sundström M, Chang SC, Noker PE, et al. 2012. Comparative pharmacokinetics of perfluorohexanesulfonate (PFHxS) in rats, mice, and monkeys. Reprod Toxicol 33(4):441-451.
- Sunström M, Ehresman DJ, Bignert A, et al. 2011. A temporal trend study (1972-2008) of perfluorooctanesulfonate, perfluorohexanesulfonate, and perfluorooctanoate in pooled human milk samples from Stockholm, Sweden. Environ Int 37:178-183.
- Sweeney LM, Tyler TR, Kirman CR, et al. 2001. Proposed occupational exposure limits for select ethylene glycol ethers using PBPK models and Monte Carlo simulations. Toxicol Sci 62(1):124-139.
- Takacs ML, Abbott BD. 2007. Activation of mouse and human peroxisome proliferator-activated receptors (a, b/d, c) by perfluorooctanoic acid and perfluorooctane sulfonate. Toxicol Sci 95(1):108-117.
- Takagi A, Sai K, Umemura T, et al. 1991. Short-term exposure to the peroxisome proliferators, perfluorooctanoic acid and perfluorodecanoic acid, causes significant increase of 8-hydroxydeoxyguanosine in liver DNA of rats. Cancer Lett 57(1):55-60.
- +Takahashi M, Ishida S, Hirata-Koizumi M, et al. 2014. Repeated dose and reproductive/developmental toxicity of perfluoroundecanoic acid in rats. J Toxicol Sci 39(1):97-108.
- +Tan X, Xie G, Sun X, et al. 2013. High fat diet feeding exaggerates perfluorooctanoic acid-induced liver injury in mice via modulating multiple metabolic pathways. PLoS ONE 8(4):e61409.
- Tan Y, Clewell HJ, Andersen ME. 2008. Time dependencies in perfluorooctylacids disposition in rat and monkeys: A kinetic analysis. Toxicol Lett 177:38-47.
- Tatum-Gibbs K, Wambaugh JF, Das KP, et al. 2011. Comparative pharmacokinetics of perfluorononanoic acid in rat and mouse. Toxicology 281(1-3):48-55. 10.1016/j.tox.2011.01.003.
- Tao L, Kannan K, Aldous KM, et al. 2008a. Biomonitoring of perfluorochemicals in plasma of New York State personnel responding to the World Trade Center disaster. Environ Sci Technol 42(9):3472-3478.
- Tao L, Kannan K, Wong CM, et al. 2008b. Perfluorinated compounds in human milk from Massachusetts, U.S.A. Environ Sci Technol 42(8):3096-3101.
- Tarazona JV, Rodriguez C, Alonso E, et al. 2016. Toxicokinetics of perfluorooctane sulfonate in rabbits under environmentally realistic exposure conditions and comparative assessment between mammals and birds. Toxicol Lett 241:200-206. 10.1016/j.toxlet.2015.11.002.

- Tardiff RG, Carson ML, Sweeney LM, et al. 2009. Derivation of a drinking water equivalent level (DWEL) related to the maximum contaminant level goal for perfluorooctanoic acid (PFOA), a persistent water soluble compound. Food Chem Toxicol 47(10):2557-2589.
- Taylor KW, Hoffman K, Thayer KA, et al. 2014. Polyfluoroalkyl chemicals and menopause among women 20-65 years of age (NHANES). Environ Health Perspect 122(2):145-150. 10.1289/ehp.1306707.
- +Thibodeaux JR, Hanson RG, Rogers JM, et al. 2003. Exposure to perfluorooctane sulfonate during pregnancy in rat and mouse. I: Maternal and prenatal evaluations. Toxicol Sci 74(2):369-381.
- +Thomford PJ. 2001. 4-Week capsule toxicity study with ammonium perfluorooctanoate (APFO) in Cynomolgus monkeys. APME Ad-Hoc APFO toxicology working group.
- +Thomford PJ. 2002a. 4-week capsule toxicity study with perfluorooctane sulfonic acid potassium salt (PFOS; T-6295) in Cynomolgus monkeys. St. Paul, MN: 3M.
- +Thomford PJ. 2002b. 104-Week dietary chronic toxicity and carcinogenicity study with perfluorooctane sulfonic acid potassium salt (PFOS; T-6295) in rats. St. Paul, MN: 3M.
- Thompson J, Lorber M, Toms LM, et al. 2010. Use of simple pharmacokinetic modeling to characterize exposure of Australians to perfluorooctanoic acid and perfluorooctane sulfonic acid. Environ Int 36(4):390-397. 10.1016/j.envint.2010.02.008.
- Thomsen C, Haug LS, Stigum H, et al. 2010. Changes in concentrations of perfluorinated compounds, polybrominated diphenyl ethers, and polychlorinated biphenyls in Norwegian breast-milk during twelve months of lactation. Environ Sci Technol 44(24):9550-9556.
- Timmermann CA, Budtz-Jorgensen E, Petersen MS, et al. 2017. Shorter duration of breastfeeding at elevated exposures to perfluoroalkyl substances. Reprod Toxicol 68:164-170. http://doi.org/10.1016/j.reprotox.2016.07.010.
- Timmermann CA, Rossing LI, Grontved A, et al. 2014. Adiposity and glycemic control in children exposed to perfluorinated compounds. J Clin Endocrinol Metab 99(4):E608-614. 10.1210/jc.2013-3460.
- Tittlemier S, Ryan JJ, Van Oostdam J. 2004. Presence of anionic perfluorinated organic compounds in serum collected from northern Canadian populations. Organohalogen Compounds 66:3959-3964.
- Tittlemier SA, Pepper K, Seymour C, et al. 2007. Dietary exposure of Canadians to perfluorinated carboxylates and perfluorocatane sulfonate via consumption of meat, fish, fast foods, and food items prepared in their packaging. J Agric Food Chem 55:3203-3210.
- Toft G, Jonsson BA, Bonde JP, et al. 2016. Perfluorooctane sulfonate concentrations in amniotic fluid, biomarkers of fetal Leydig Cell Function, and cryptorchidism and hypospadias in Danish boys (1980-1996). Environ Health Perspect 124(1):151-156. 10.1289/ehp.1409288.
- Toft G, Jonsson BA, Lindh CH, et al. 2012. Exposure to perfluorinated compounds and human semen quality in Arctic and European populations. Hum Reprod 27(8):2532-2540.
- Toms LL, Calafat AM, Kato K, et al. 2009. Polyfluoroalkyl chemicals in pooled blood serum from infants, children, and adults in Australia. Environ Sci Technol 43(11):4194-4199.
- Tomy GT, Budakowski W, Halldorson T, et al. 2004. Fluorinated organic compounds in an eastern arctic marine food web. Environ Sci Technol 38:6475-6481.
- Trasande L, Koshy TT, Gilbert J, et al. 2017. Serum perfluoroalkyl substances in children exposed to the World Trade Center disaster. Environ Res 154:212-221. http://doi.org/10.1016/j.envres.2017.01.008.
- Trudel D, Horowitz L, Wormuth M, et al. 2008. Estimating consumer exposure to PFOS and PFOA. Risk Anal 28(2):251-269.
- Tsai MS, Lin CC, Chen MH, et al. 2017. Perfluoroalkyl substances and thyroid hormones in cord blood. Environ Pollut 222:543-548. http://doi.org/10.1016/j.envpol.2016.11.027.
- Tsai MS, Lin CY, Lin CC, et al. 2015. Association between perfluoroalkyl substances and reproductive hormones in adolescents and young adults. Int J Hyg Environ Health 218(5):437-443. 10.1016/j.ijheh.2015.03.008.

- +Tucker DK, Macon MB, Strynar MJ, et al. 2015. The mammary gland is a sensitive pubertal target in CD-1 and C57Bl/6 mice following perinatal perfluorooctanoic acid (PFOA) exposure. Reprod Toxicol 54:26-36. 10.1016/j.reprotox.2014.12.002.
- Uhl SA, James-Todd T, Bell ML. 2013. Association of osteoarthritis with perfluorooctanoate and perfluorooctane sulfonate in NHANES 2003-2008. Environ Health Perspect 121(4):447-452.
- Upham BL, Deocampo ND, Wurl B, et al. 1998. Inhibition of gap junctional intercellular communication by perfluorinated fatty acids is dependent on the chain length of the fluorinated tail. Int J Cancer 78:491-495.
- Upham BL, Park JS, Babica P, et al. 2009. Structure-activity-dependent regulation of cell communication by perfluorinated fatty acids using *in vivo* and *in vitro* model systems. Environ Health Perspect 117(4):545-551. 10.1289/ehp.11728.
- URS. 2012. MOU Phase III future work plan data assessment DuPont Washington Works, Washington, West Virginia, PFOA site-related environmental assessment program (OPPT-2004-0113 PFOA). In: Docket EPA-HQ-2004-0113-0517. Supporting documents: Letter to Dr. Maria Doa, Director, Chemical Control Division, USEPA, from Andrew S. Hartten, Principal Remediation Project Manager, DuPont Corporate Remediation Group. URS Corporation. https://www.regulations.gov/document?D=EPA-HQ-OPPT-2004-0113-0516. February 28, 2017.
- Vagi SJ, Azziz-Baumgartner E, Sjodin A, et al. 2014. Exploring the potential association between brominated diphenyl ethers, polychlorinated biphenyls, organochlorine pesticides, perfluorinated compounds, phthalates, and bisphenol A in polycystic ovary syndrome: A case-control study. BMC Endocr Disord 14:86. 10.1186/1472-6823-14-86.
- Vanden Heuvel JP, Davis JW, Sommers R, et al. 1992a. Renal excretion of perfluorooctanoic acid in male rats: Inhibitory effect of testosterone. J Biochem Toxicol 7(1):31-36.
- Vanden Heuvel JP, Kuslikis BI, Peterson RE. 1992b. Covalent binding of perfluorinated fatty acids to proteins in the plasma, liver and testes of rats. Chem Biol Interact 82:318-328.
- Vanden Heuvel JP, Kuslikis BI, Shrago E, et al. 1991a. Inhibition of long-chain acyl-CoA synthetase by the peroxisome proliferator perfluorodecanoic acid in rat hepatocytes. Biochem Pharmacol 42(2):295-302.
- Vanden Heuvel JP, Kuslikis BI, Van Rafelghem MJ, et al. 1991b. Disposition of perfluorodecanoic acid in male and female rats. Toxicol Appl Pharmacol 107:450-459.
- Vanden Heuvel JP, Kuslikis BI, Van Rafelghem MJ, et al. 1991c. Tissue distribution, metabolism, and elimination of perfluorooctanoic acid in male and female rats. J Biochem Toxicol 6(2):83-92.
- Vanden Heuvel JP, Thompson JT, Frame SR, et al. 2006. Differential activation of nuclear receptors by perfluorinated fatty acid analogs and natural fatty acids: A comparison of human, mouse, and rat peroxisome proliferator-activated receptor- α , - β , and - γ , liver x receptor- β , and retinoid x receptor- α . Toxicol Sci 92(2):476-489.
- +van Otterdijk FM. 2007a. Repeated dose 28-day oral toxicity study with MTDID-8391 by daily gavage in the rat, followed by a 21-day recovery period. 3M.
- van Otterdijk FM. 2007b. Repeated dose 90-day oral toxicity study with MTDID 8391 by daily gavage in the rat followed by a 3-week recovery period. 3M.
- Vélez MP, Arbuckle TE, Fraser WD. 2015. Maternal exposure to perfluorinated chemicals and reduced fecundity: The MIREC study. Hum Reprod 30(3):701-709. 10.1093/humrep/deu350.
- Vermont DOH. 2018. Drinking water health advisory for five PFAS (per- and polyfluorinated alkyl substances). Burlington, VT: Vermont Department of Health. http://www.healthvermont.gov/sites/default/files/documents/pdf/ENV_DW_PFAS_HealthAdvisory. pdf. November 30, 2018.
- Verner MA, Loccisano AE, Morken NH, et al. 2015. Associations of perfluoroalkyl substances (PFAS) with lower birth weight: An evaluation of potential confounding by glomerular filtration rate using a physiologically based pharmacokinetic model (PBPK). Environ Health Perspect 123(12):1317-1324.

- Verner MA, Longnecker MP. 2015. Comment on "Enhanced elimination of perfluorooctanesulfonic acid by menstruating women: Evidence from population-based pharmacokinetic modeling." Environ Sci Technol 49(9):5836-5837. 10.1021/acs.est.5b00187.
- Verner MA, Ngueta G, Jensen ET, et al. 2016a. A simple pharmacokinetic model of prenatal and postnatal exposure to perfluoroalkyl substances (PFASs). Environ Sci Technol 50(2):978-986.
- Verner MA, Ngueta G, Jensen ET, et al. 2016b. Correction to a simple pharmacokinetic model of prenatal and postnatal exposure to perfluoroalkyl substances (PFASs). Environ Sci Technol 50(3):5420-5421.
- Verreault J, Berger U, Gabrielsen GW. 2007. Trends of perfluorinated alkyl substances in herring gull eggs from two coastal colonies in northern Norway: 1983-2003. Environ Sci Technol 41:6671-6677.
- Verreault J, Houde M, Gabrielsen GW, et al. 2005. Perfluorinated alkyl substances in plasma, liver, brain, and eggs of glaucous gulls (*Larus hyperboreus*) from the Norwegian Arctic. Environ Sci Technol 39:7439-7445.
- Vested A, Ramlau-Hansen CH, Olsen SF, et al. 2013. Associations of *in utero* exposure to perfluorinated alkyl acids with human semen quality and reproductive hormones in adult men. Environ Health Perspect 121(4):453-458.
- Vestergaard S, Nielsen F, Andersson AM, et al. 2012. Association between perfluorinated compounds and time to pregnancy in a prospective cohort of Danish couples attempting to conceive. Hum Reprod 27(3):873-880.
- Vestergren R, Cousins IT. 2009. Tracking the pathways of human exposure to perfluorocarboxylates. Environ Sci Technol 43(15):5565-5575.
- Vestergren R, Cousins IT, Trudel D, et al. 2008. Estimating the contribution of precursor compounds in consumer exposure to PFOS and PFOA. Chemosphere 73(10):1617-1624.
- Vesterholm Jensen D, Christensen J, Virtanen HE, et al. 2014. No association between exposure to perfluorinated compounds and congenital cryptorchidism: A nested case-control study among 215 boys from Denmark and Finland. Reproduction 147(4):411-417.
- +Vetvicka V, Vetvickova J. 2013. Reversal of perfluorooctanesulfonate-induced immunotoxicity by a glucan-resveratrol-vitamin C combination. Orient Pharm Exp Med 13(1):77-84.
- +Viberg H, Lee I, Eriksson P. 2013. Adult dose-dependent behavioral and cognitive disturbances after a single neonatal PFHxS dose. Toxicology 304:185-191.
- Vieira VM, Hoffman K, Shin M, et al. 2013. Perfluorooctanoic acid exposure and cancer outcomes in a contaminated community: A geographic analysis. Environ Health Perspect 121(3):318-323.
- Vierke L, Berger U, Cousins IT. 2013. Estimation of the acid dissociation constant of perfluoroalkyl carboxylic acids through an experimental investigation of their water-to-air transport. Environ Sci Technol 47(19):11032-11039. http://doi.org/10.1021/es402691z. http://www.ncbi.nlm.nih.gov/pubmed/23952814.
- Völkel W, Genzel-Boroviczeny O, Demmelmair H, et al. 2008. Perfluorooctane sulphonate (PFOS) and perfluorooctanoic acid (PFOA) in human breast milk: Results of a pilot study. Int J Hyg Environ Health 211:440-446.
- von Ehrenstein OS, Fenton SE, Kato K, et al. 2009. Polyfluoroalkyl chemicals in the serum and milk of breastfeeding women. Reprod Toxicol 27(3-4):239-245.
- Vuong AM, Yolton K, Wang Z, et al. 2018. Childhood perfluoroalkyl substance exposure and executive function in children at 8 years. Environ Int 119:212-219. http://doi.org/10.1016/j.envint.2018.06.028.
- Vuong AM, Yolton K, Webster GM, et al. 2016. Prenatal polybrominated diphenyl ether and perfluoroalkyl substance exposures and executive function in school-age children. Environ Res 147:556-564. 10.1016/j.envres.2016.01.008.
- Wallace K, Kissling G, Melnick R, et al. 2013. Structure-activity relationships for perfluoroalkane-induced *in vitro* interference with rat liver mitochondrial respiration. Toxicol Lett 222(3):257-264.

- Wallington TJ, Hurley MD, Xia J, et al. 2006. Formation of C₇F₁₅COOH (PFOA) and other perfluorocarboxylic acids during the atmospheric oxidation of 8:2 fluorotelomer alcohol. Environ Sci Technol 40:924-930.
- Walters M, Bjork J, Wallace K. 2009. Perfluorooctanoic acid stimulated mitochondrial biogenesis and gene transcription in rats. Toxicology 264(1):10-15.
- Wambaugh JF, Barton HA, Setzer RW. 2008. Comparing models for perfluorooctanoic acid pharmacokinetics using Bayesian analysis. J Pharmacokinet Pharmacodyn 35(6):683-712. 10.1007/s10928-008-9108-2.
- Wambaugh JF, Setzer RW, Pitruzzello AM, et al. 2013. Dosimetric anchoring of *in vivo* and *in vitro* studies for perfluorooctanoate and perfluorooctanesulfonate. Toxicol Sci 136(2):308-327. 10.1093/toxsci/kft204.
- Wan HT, Mruk DD, Wong CK, et al. 2014a. Perfluorooctanesulfonate (PFOS) perturbs male rat Sertoli cell blood-testis barrier function by affecting F-actin organization via p-FAK-Tyr(407): An *in vitro* study. Endocrinology 155(1):249-262. 10.1210/en.2013-1657.
- +Wan HT, Zhao YG, Wong MH, et al. 2011. Testicular signaling is the potential target of perfluorooctanesulfonate-mediated subfertility in male mice. Biol Reprod 84(5):1016-1023.
- +Wan HT, Zhao YG, Leung PY, et al. 2014b. Perinatal exposure to perfluorooctane sulfonate affects glucose metabolism in adult offspring. PLoS ONE 9(1):e87137. 10.1371/journal.pone.0087137.
- Wang B, Zhang R, Jin F, et al. 2017. Perfluoroalkyl substances and endometriosis-related infertility in Chinese women. Environ Int 102:207-212. http://doi.org/10.1016/j.envint.2017.03.003.
- Wang H, Yang J, Du H, et al. 2018. Perfluoroalkyl substances, glucose homeostasis, and gestational diabetes mellitus in Chinese pregnant women: A repeat measurement-based prospective study. Environ Int 114:12-20. http://doi.org/10.1016/j.envint.2018.01.027.
- Wang IJ, Hsieh W-S, Chen C-Y, et al. 2011. The effect of prenatal perfluorinated chemicals exposures on pediatric atopy. Environ Res 111(6):785-791.
- Wang J, Zhang Y, Zhang W, et al. 2012. Association of perfluorooctanoic acid with HDL cholesterol and circulating miR-26b and miR-199-3p in workers of a fluorochemical plant and nearby residents. Environ Sci Technol 46(17):9274-9281.
- +Wang J, Yan S, Zhang W, et al. 2015a. Integrated proteomic and miRNA transcriptional analysis reveals the hepatotoxicity mechanism of PFNA exposure in mice. J Proteome Res 14(1):330-341. 10.1021/pr500641b.
- Wang N, Szostek B, Buck RC, et al. 2005a. Fluorotelomer alcohol biodegradation—direct evidence that perfluorinated carbon chains breakdown. Environ Sci Technol 39:7516-7528.
- Wang N, Szostek B, Folsom PW, et al. 2005b. Aerobic biotransformation of 14c-labeled 8-2 telomer B alcohol by activated sludge from a domestic sewage treatment plant. Environ Sci Technol 39:531-538.
- Wang Y, Adgent M, Su PH, et al. 2016. Prenatal exposure to perfluorocarboxylic acids (PFCAs) and fetal and postnatal growth in the Taiwan maternal and infant cohort study. Environ Health Perspect 10.1289/ehp.1509998.
- +Wang Y, Liu W, Zhang Q, et al. 2015c. Effects of developmental perfluorooctane sulfonate exposure on spatial learning and memory ability of rats and mechanism associated with synaptic plasticity. Food Chem Toxicol 76:70-76. 10.1016/j.fct.2014.12.008.
- Wang Y, Rogan WJ, Chen PC, et al. 2014. Association between maternal serum perfluoroalkyl substances during pregnancy and maternal and cord thyroid hormones: Taiwan maternal and infant cohort study. Environ Health Perspect 122(5):529-534. 10.1289/ehp.1306925.
- Wang Y, Rogan WJ, Chen HY, et al. 2015b. Prenatal exposure to perfluoroalkyl substances and children's IQ: The Taiwan maternal and infant cohort study. Int J Hyg Environ Health 218(7):639-644. 10.1016/j.ijheh.2015.07.002.
- Wang Y, Starling AP, Haug LS, et al. 2013a. Association between perfluoroalkyl substances and thyroid stimulating hormone among pregnant women: A cross-sectional study. Environ Health 12(1):76. 10.1186/1476-069x-12-76.

- Wang Y, Yeung LWY, Taniyasu S, et al. 2008. Perfluorooctane sulfonate and other fluorochemicals in waterbird eggs from south China. Environ Sci Technol 42(21):8146-8151.
- Wang Z, Boucher JM, Scheringer M, et al. 2017. Toward a comprehensive global emission inventory of C4-C10 perfluoroalkanesulfonic acids (PFSAs) and related precursors: Focus on the life cycle of C8-based products and ongoing industrial transition. Environ Sci Technol 51(8):4482-4493. http://doi.org/10.1021/acs.est.6b06191.
- Wang Z, Cousins IT, Scheringer M, et al. 2013b. Fluorinated alternatives to long-chain perfluoroalkyl carboxylic acids (PFCAs), perfluoroalkane, sulfonic acids (PFSAs) and their potential precursors. Environ Int 60:242-248.
- Wania F. 2007. A global mass balance analysis of the source of perfluorocarboxylic acids in the Arctic Ocean. Environ Sci Technol 41:4529-4535.
- Washburn ST, Bingman TS, Braitwaite SK, et al. 2005. Exposure assessment and risk characterization for perfluorooctanoate in selected consumer articles. Environ Sci Technol 39:3904-3910.
- Washington JW, Ellington J, Jenkins TM, et al. 2009. Degradability of an acrylate-linked, fluorotelomer polymer in soil. Environ Sci Technol 43(17):6617-6623.
- Washington JW, Jenkins TM. 2015. Abiotic hydrolysis of fluorotelomer-based polymers as a source of perfluorocarboxylates at the global scale. Environ Sci Technol 49(24):14129-14135. 10.1021/acs.est.5b03686.
- Washington JW, Jenkins TM, Rankin K, et al. 2015. Decades-scale degradation of commercial, side-chain, fluorotelomer-based polymers in soils and water. Environ Sci Technol 49(2):915-823.
- Washino N, Saijo Y, Sasaki S, et al. 2009. Correlations between prenatal exposure to perfluorinated chemicals and reduced fetal growth. Environ Health Perspect 117:660-667.
- Watkins DJ, Josson J, Elston B, et al. 2013. Exposure to perfluoroalkyl acids and markers of kidney function among children and adolescents living near a chemical plant. Environ Health Perspect 121(5):625-630.
- Weaver YM, Ehresman DJ, Butenhoff JL, et al. 2010. Roles of rat renal organic anion transporters in transporting perfluorinated carboxylates with different chain lengths. Toxicol Sci 113(2):305-314.
- Webster GM, Rauch SA, Marie NS, et al. 2016. Cross-sectional associations of serum perfluoroalkyl acids and thyroid hormones in U.S. adults: Variation according to TPOAb and iodine status (NHANES 2007-2008). Environ Health Perspect 124(7):935-942. 10.1289/ehp.1409589.
- Wei S, Chen LQ, Taniyasu S, et al. 2007a. Distribution of perfluorinated compounds in surface seawaters between Asia and Antarctica. Mar Pollut Bull 54:1813-1838.
- Wei Y, Dai J, Liu M, et al. 2007b. Estrogen-like properties of perfluorooctanoic acid as revealed by expressing hepatic estrogen-responsive genes in rare minnows (*Gobiocyris rarus*). Environ Toxicol Chem 26(11):2440-2447.
- Wen LL, Lin LY, Su TC, et al. 2013. Association between serum perfluorinated chemicals and thyroid function in U.S. adults: The national health and nutrition examination survey 2007-2010. J Clin Endocrinol Metab 98(9):E1456-1464. 10.1210/jc.2013-1282.
- +White SS, Calafat AM, Kuklenyik Z, et al. 2007. Gestational PFOA exposure of mice is associated with altered mammary gland development in dams and female offspring. Toxicol Sci 96(1):133-144.
- +White SS, Kato K, Jia LT, et al. 2009. Effects of perfluorooctanoic acid on mouse mammary gland development and differentiation resulting from cross-foster and restricted gestational exposures. Reprod Toxicol 27(3-4):289-298.
- +White SS, Stanko JP, Kato K, et al. 2011. Gestational and chronic low-dose PFOA exposures and mammary gland growth and differentiation in three generations of CD-1 mice. Environ Health Perspect 119(8):1070-1076.
- Whitworth KW, Haug LS, Baird DD, et al. 2012a. Perfluorinated compounds in relation to birth weight in the Norwegian Mother and Child Cohort Study. Am J Epidemiol 175(12):1209-1216.
- Whitworth KW, Haug LS, Baird DD, et al. 2012b. Perfluorinated compounds and subfecundity in pregnant women. Epidemiology 23(2):257-263.

- Whitworth KW, Haug LS, Sabaredzovic A, et al. 2016. Brief report: Plasma concentrations of perfluorooctane sulfonamide and time-to-pregnancy among primiparous women. Epidemiology 27(5):712-715. http://doi.org/10.1097/ede.000000000000524.
- WHO. 2010. Guidelines for indoor air quality: Selected pollutants. Geneva, Switzerland: World Health Organization. http://www.euro.who.int/__data/assets/pdf_file/0009/128169/e94535.pdf. January 08, 2014.
- WHO. 2017. Guidelines for drinking-water quality. Geneva, Switzerland: World Health Organization. http://apps.who.int/iris/bitstream/10665/254637/1/9789241549950-eng.pdf?ua=1. February 28, 2017
- Wielsoe M, Kern P, Bonefeld-Jorgensen EC. 2017. Serum levels of environmental pollutants is a risk factor for breast cancer in Inuit: A case control study. Environ Health 16(1):56. http://doi.org/10.1186/s12940-017-0269-6.
- Wilhelm M, Kraft M, Rauchfuss K, et al. 2008. Assessment and management of the first German case of a contamination with perfluorinated compounds (PFC) in the Region Sauerland, North Rhine-Westphalia. J Toxicol Environ Health A 71:725-733.
- Wilhelm M, Holzer J, Dobler L, et al. 2009. Preliminary observations on perfluorinated compounds in plasma samples (1977-2004) of young German adults from an area with perfluorooctanoate-contaminated drinking water. Int J Hyg Environ Health 212(2):142-145.
- Winquist A, Steenland K. 2014a. Modeled PFOA exposure and coronary artery disease, hypertension, and high cholesterol in community and worker cohorts. Environ Health Perspect 122(12):1299-1305. 10.1289/ehp.1307943.
- Winquist A, Steenland K. 2014b. Perfluorooctanoic acid exposure and thyroid disease in community and worker cohorts. Epidemiology 25(2):255-264. 10.1097/ede.0000000000000040.
- +Wolf CJ, Fenton SE, Schmid JE, et al. 2007. Developmental toxicity of perfluorooctanoic acid in the CD-1 mouse after cross-foster and restricted gestational exposures. Toxicol Sci 95(2):462-473.
- Wolf CJ, Rider CV, Lau C, et al. 2014. Evaluating the additivity of perfluoroalkyl acids in binary combinations on peroxisome proliferator-activated receptor-alpha activation. Toxicology 316:43-54. 10.1016/j.tox.2013.12.002.
- Wolf CJ, Schmid JE, Lau C, et al. 2012. Activation of mouse and human peroxisome proliferator-activated receptor-alpha (PPARa) by perfluoroalkyl acids (PFAAs): Further investigation of C4-C12 compounds. Reprod Toxicol 33:546-551.
- Wolf CJ, Takacs ML, Schmid JE, et al. 2008a. Activation of mouse and human peroxisome proliferator-activated receptor alpha by perfluoroalkyl acids of different functional groups and chain lengths. Toxicol Sci 106(1):162-171.
- +Wolf CJ, Zehr RD, Schmid JE, et al. 2010. Developmental effects of perfluorononanoic Acid in the mouse are dependent on peroxisome proliferator-activated receptor-alpha. PPAR Res 2010 10.1155/2010/282896.
- Wolf DC, Moore T, Abbott BD, et al. 2008b. Comparative hepatic effects of perfluorooctanoic acid and WY 14,643 in PPAR-α knockout and wild-type mice. Toxicol Pathol 36(4):632-639. 10.1177/0192623308318216.
- Wong F, MacLeod M, Mueller JF, et al. 2014. Enhanced elimination of perfluorooctane sulfonic acid by menstruating women: Evidence from population-based pharmacokinetic modeling. Environ Sci Technol 48(15):8807-8814.
- Wong F, MacLeod M, Mueller JF, et al. 2015. Response to comment on "Enhanced elimination of perfluorooctane sulfonic acid by menstruating women: Evidence from population-based pharmacokinetic modeling." Environ Sci Technol 49(9):5838-5839.
- Worley RR, Fisher J. 2015a. Application of physiologically-based pharmacokinetic modeling to explore the role of kidney transporters in renal reabsorption of perfluorooctanoic acid in the rat. Toxicol Appl Pharmacol 289(3):428-441. 10.1016/j.taap.2015.10.017.

- Worley RR, Fisher J. 2015b. Supplementary material: Application of physiologically-based pharmacokinetic modeling to explore the role of kidney transporters in renal reabsorption of perfluorooctanoic acid in the rat. Toxicol Appl Pharmacol 289(3):428-441.
- Worley RR, Moore SM, Tierney BC, et al. 2017a. Per- and polyfluoroalkyl substances in human serum and urine samples from a residentially exposed community. Environ Int 106:135-143. 10.1016/j.envint.2017.06.007.
- Worley RR, Yang X, Fisher J. 2017b. Physiologically based pharmacokinetic modeling of human exposure to perfluorooctanoic acid suggests historical non drinking-water exposures are important for predicting current serum concentrations. Toxicol Appl Pharmacol 330:9-21. 10.1016/j.taap.2017.07.001.
- Woskie SR, Gore R, Steenland K. 2012. Retrospective exposure assessment of perfluorooctanoic acid serum concentrations at a fluoropolymer manufacturing plant. Ann Occup Hyg 56(9):1025-1037. 10.1093/annhyg/mes023.
- Wu H, Yoon M, Verner MA, et al. 2015. Can the observed association between serum perfluoroalkyl substances and delayed menarche be explained on the basis of puberty-related changes in physiology and pharmacokinetics? Environ Int 82:61-68. http://doi.org/10.1016/j.envint.2015.05.006.
- Wu K, Xu X, Peng L, et al. 2012. Association between maternal exposure to perfluorooctanoic acid (PFOA) from electronic waste recycling and neonatal outcomes. Environ Int 48:1-8.
- Wu LL, Gao HW, Gao NY, et al. 2009. Interaction of perfluorooctanoic acid with human serum albumin. BMC Struct Biol 9:31.
- +Xia W, Wan Y, Li YY, et al. 2011. PFOS prenatal exposure induce mitochondrial injury and gene expression change in hearts of weaned SD rats. Toxicology 282(1-2):23-29.
- Xiang Q, Shan G, Wu W, et al. 2018. Measuring log Kow coefficients of neutral species of perfluoroalkyl carboxylic acids using reversed-phase high-performance liquid chromatography. Environ Pollut 242(Pt B):1283-1290. http://doi.org/10.1016/j.envpol.2018.08.009.
- Xiao F, Simcik MF, Halbach TR, et al. 2015. Perfluorooctane sulfonate (PFOS) and perfluorooctanoate (PFOA) in soils and groundwater of a U.S. metropolitan area: Migration and implications for human exposure. Water Res 72:64-74.
- +Xie Y, Yang Q, Nelson BD, et al. 2003. The relationship between liver peroxisome proliferation and adipose tissue atrophy induced by peroxisome proliferator exposure and withdrawal in mice. Biochem Pharmacol 66(5):749-756.
- +Xing J, Wang G, Zhao J, et al. 2016. Toxicity assessment of perfluorooctane sulfonate using acute and subchronic male C57BL/6J mouse models. Environ Pollut 210:388-396. 10.1016/j.envpol.2015.12.008.
- Xu J, Shimpi P, Armstrong L, et al. 2016. PFOS induces adipogenesis and glucose uptake in association with activation of Nrf2 signaling pathway. Toxicol Appl Pharmacol 290:21-30.
- +Yahia D, El-Nasser MA, Abedel-Latif M, et al. 2010. Effects of perfluorooctanoic acid (PFOA) exposure to pregnant mice on reproduction. J Toxicol Sci 35(4):527-533.
- +Yahia D, Tsukuba C, Yoshida M, et al. 2008. Neonatal death of mice treated with perfluorooctane sulfonate. J Toxicol Sci 33(2):219-226.
- Yamada A, Maeda K, Kamiyama E, et al. 2007. Multiple human isoforms of drug transporters contribute to the hepatic and renal transport of olmesartan, a selective antagonist of the angiotensin II AT1-receptor. Drug Metab Dispos 35(12):2166-2176. 10.1124/dmd.107.017459.
- Yamada T, Taylor PH, Buck RC, et al. 2005. Thermal degradation of fluorotelomer treated articles and related materials. Chemosphere 61:974-984.
- Yamaguchi M, Arisawa K, Uemura H, et al. 2013. Consumption of seafood, serum liver enzymes, and blood levels of PFOS and PFOA in the Japanese population. J Occup Health 55(3):184-194.
- Yamashita N, Kannan K, Taniyasu S, et al. 2005. A global survey of perfluorinated acids in oceans. Mar Pollut Bull 51:658-668.
- Yamashita N, Taniyasu S, Petrick G, et al. 2008. Perfluorinated acids as novel chemical tracers of global circulation of ocean waters. Chemosphere 70:1247-1255.

- Yang B, Zou W, Hu Z, et al. 2014. Involvement of oxidative stress and inflammation in liver injury caused by perfluorooctanoic acid exposure in mice. BioMed Research International 2014:409837. http://doi.org/10.1155/2014/409837.
- +Yang C, Tan YS, Harkema JR, et al. 2009. Differential effects of peripubertal exposure to perfluorooctanoic acid on mammary gland development in C57Bl/6 and Balb/c mouse strains. Reprod Toxicol 27:299-306. http://doi.org/10.1016/j.reprotox.2008.10.003.
- Yang CH, Glover KP, Han X. 2010. Characterization of cellular uptake of perfluorooctanoate via organic anion-transporting polypeptide 1A2, organic anion transporter 4, and urate transporter 1 for their potential roles in mediating human renal reabsorption of perfluorocarboxylates. Toxicol Sci 117(2):294-302.
- Yang L, Li J, Lai J, et al. 2016a. Placental transfer of perfluoroalkyl substances and associations with thyroid hormones: Beijing prenatal exposure study. Sci Rep 6:21699. 10.1038/srep21699.
- Yang L, Wang Z, Shi Y, et al. 2016b. Human placental transfer of perfluoroalkyl acid precursors: Levels and profiles in paired maternal and cord serum. Chemosphere 144:1631-1638. 10.1016/j.chemosphere.2015.10.063.
- +Yang Q, Abedi-Valugerdi M, Xie Y, et al. 2002a. Potent suppression of the adaptive immune response in mice upon dietary exposure to the potent peroxisome proliferator, perfluorooctanoic acid. Int Immunopharmacol 2(2-3):389-397.
- Yang Q, Guo X, Sun P, et al. 2018. Association of serum levels of perfluoroalkyl substances (PFASs) with the metabolic syndrome (MetS) in Chinese male adults: A cross-sectional study. Sci Total Environ 621:1542-1549. http://doi.org/10.1016/j.scitotenv.2017.10.074.
- +Yang Q, Xie Y, Alexson SE, et al. 2002b. Involvement of the peroxisome proliferator-activated receptor alpha in the immunomodulation caused by peroxisome proliferators in mice. Biochem Pharmacol 63(10):1893-1900.
- +Yang Q, Xie Y, Depierre JW. 2000. Effects of peroxisome proliferators on the thymus and spleen of mice. Clin Exp Immunol 122(2):219-226.
- +Yang Q, Xie Y, Eriksson AM, et al. 2001. Further evidence for the involvement of inhibition of cell proliferation and development in thymic and splenic atrophy induced by the peroxisome proliferator perfluorooctanoic acid in mice. Biochem Pharmacol 62(8):1133-1140.
- Yao PL, Ehresman DJ, Rae JM, et al. 2014. Comparative *in vivo* and *in vitro* analysis of possible estrogenic effects of perfluorooctanoic acid. Toxicology 326:62-73. 10.1016/j.tox.2014.10.008.
- Yao X, Zhong L. 2005. Genotoxic risk and oxidative DNA damage in HepG2 cells exposed to perfluorooctanoic acid. Mutat Res 587:38-44.
- Yao Y, Zhao Y, Sun H, et al. 2018. Per- and polyfluoroalkyl substances (PFASs) in indoor air and dust from homes and various microenvironments in China: Implications for human exposure. Environ Sci Technol 52(5):3156-3166. http://doi.org/10.1021/acs.est.7b04971.
- Yarwood G, Kemball-Cook S, Keinath M, et al. 2007. High-resolution atmospheric modeling of fluorotelomer alcohols and perfluorocarboxylic acids in the North American troposphere. Environ Sci Technol 41:5756-5762.
- Ye X, Kato K, Wong LY, et al. 2018a. Per- and polyfluoroalkyl substances in sera from children 3 to 11 years of age participating in the National Health and Nutrition Examination Survey 2013-2014. Int J Hyg Environ Health 221(1):9-16. 10.1016/j.ijheh.2017.09.011.
- Ye X, Kato K, Wong LY, et al. 2018b. Supporting information to "Per- and polyfluoroalkyl substances in sera from children 3 to 11 years of age participating in the National Health and Nutrition Examination Survey 2013-2014" [Int J Hyg Environ Health 221(1):9-16. 10.1016/j.ijheh.2017.09.011]. Int J Hyg Environ Health https://www.sciencedirect.com/science/article/pii/S1438463917305886#sec0045. December 19, 2017.
- Ye X, Strynar MJ, Nakayama SF, et al. 2008. Perfluorinated compounds in whole fish homogenates from the Ohio, Missouri, and Upper Mississippi Rivers, USA. Environ Pollut 156(3):1227-1232. 10.1016/j.envpol.2008.03.014.

- Yeung LW, Robinson SJ, Koschorreck J, et al. 2013. Part II. A temporal study of PFOS and its precursors in human plasma from two German cities in 1982-2009. Environ Sci Technol 47(8):3875-3882. 10.1021/es4004153.
- Yeung LWY, Dassuncao C, Mabury S, et al. 2017. Vertical profiles, sources, and transport of PFASs in the Arctic Ocean. Environ Sci Technol 51(12):6735-6744. http://doi.org/10.1021/acs.est.7b00788.
- Ylinen M, Auriola S. 1990. Tissue distribution and elimination of perfluorodecanoic acid in the rat after single intraperitoneal administration. Pharmacol Toxicol 66:45-48.
- Ylinen M, Kojo A, Hanhijarvi H, et al. 1990. Disposition of perfluorooctanoic acid in the rat after single and subchronic administration. Bull Environ Contam Toxicol 44:46-53.
- Yoo H, Washington JW, Jenkins TM, et al. 2011. Quantitative determination of perfluorochemicals and fluorotelomer alcohols in plants from biosolid-amended fields using LC/MS/MS and GC/MS. Environ Sci Technol 45.
- York R. 2002. Oral (gavage) developmental toxicity study of potassium perfluorobutane sulfonate (PFBS) in rats [sanitized]. 10) OECD 4140OPPTS. 870.3700 Prenatal development toxicity (teratology), 418-023A. Sponsor's Study Number: T-7485.12. Laboratory Project ID: Argus Research, Protocol Number: 418-023.
- +York R. 2003a. Oral (gavage) dosage-range developmental toxicity study of potassium perfluorobutane sulfonate (PFBS) in rats. Sponsor's Study Number: T-7485.11. Argus Research, Horsham, Pennsylvania.
- +York R. 2003b. Oral (gavage) repeated dose 90-day toxicity study of potassium perfluorobutane sulfonate (PFBS) in rats. Sponsor's Study Number: T-7485.15. Argus Research, Horsham, Pennsylvania.
- +York R. 2003c. Oral (gavage) two-generation (one litter per generation) reproduction study of potassium perfluorobutane sulfonate (PFBS) in rats. Sponsor's Study Number: T-7485.13. Argus Research, Horsham, Pennsylvania.
- Young CJ, Furdui VI, Franklin J, et al. 2007. Perfluorinated acids in Arctic snow: New evidence for atmospheric formation. Environ Sci Technol 41:3455-3461.
- Yu J, Hu J, Tanaka S, et al. 2009c. Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) in sewage treatment plants. Water Res 43(9):2399-2408.
- +Yu WG, Liu W, Jin YH. 2009a. Effects of perfluorooctane sulfonate on rat thyroid hormone biosynthesis and metabolism. Environ Toxicol Chem 28(5):990-996.
- Yu WG, Liu W, Jin YH, et al. 2009b. Prenatal and postnatal impact of perfluorooctane sulfonate (PFOS) on rat development: A cross-foster study on chemical burden and thyroid hormone system. Environ Sci Technol 43(21):8416-8422.
- Yuan G, Peng H, Huang C, et al. 2016. Ubiquitous occurrence of fluorotelomer alcohols in eco-friendly paper-made food-contact materials and their implication for human exposure. Environ Sci Technol 50:942-950.
- Zeng H-c, Zhang L, Li Y-y, et al. 2011. Inflammation-like glial response in rat brain induced by prenatal PFOS exposure. Neurotoxicology 32(1):130-139.
- Zeng XW, Qian Z, Emo B. 2015. The association between perfluoroalkyl chemicals and serum lipid levels in children. Sci Total Environ 512-513:364-370
- Zhang C, Sundaram R, Maisog J, et al. 2015a. A prospective study of prepregnancy serum concentrations of perfluorochemicals and the risk of gestational diabetes. Fertil Steril 103(1):184-189.
- +Zhang H, Shi Z, Liu Y, et al. 2008. Lipid homeostasis and oxidative stress in the liver of male rats exposed to perfluorododecanoic acid. Toxicol Appl Pharmacol 227:16-25.
- Zhang H, Yolton K, Webster GM, et al. 2018. Prenatal and childhood perfluoroalkyl substances exposures and children's reading skills at ages 5 and 8 years. Environ Int 111:224-231. http://doi.org/10.1016/j.envint.2017.11.031.

- Zhang L, Ren X-M, Wan B, et al. 2014. Structure-dependent binding and activation of perfluorinated compounds on human peroxisome proliferator-activated receptor γ. Toxicol Appl Pharmacol 279(3):275-283.
- Zhang T, Sun H, Lin Y, et al. 2011. Perfluorinated compounds in human blood, water, edible freshwater fish, and seafood in China: Daily intake and regional differences in human exposures. J Agric Food Chem 59:11168-11176.
- Zhang T, Sun H, Qin X, et al. 2015b. PFOS and PFOA in paired urine and blood from general adults and pregnant women: Assessment of urinary elimination. Environ Sci Pollut Res Int 22(7):5572-5579. 10.1007/s11356-014-3725-7.
- Zhang X, Chen L, Fei XC, et al. 2009. Binding of PFOS to serum albumin and DNA: Insight into the molecular toxicity of perfluorochemicals. BMC Mol Biol 10:16.
- Zhang X, Lohmann R, Dassuncao C, et al. 2016. Source attribution of poly-and perfluoroalkyl substances (PFASs) in surface waters from Rhode Island and New York metropolitan area. Environ Sci Technol Lett 3:316-321. 10.1021/acs.estlett.6b00255.
- Zhang Y, Beesoon S, Zhu L, et al. 2013. Biomonitoring of perfluoroalkyl acids in human urine and estimates of biological half-life. Environ Sci Technol 47(18):10619-10627. 10.1021/es401905e.
- Zhao G, Wang J, Wang X, et al. 2011. Mutagenicity of PFOA in mammalian cells: Role of mitochondria-dependent reactive oxygen species. Environ Sci Technol 45(4):1638-1644.
- Zhao H, Qu B, Guan Y, et al. 2016. Influence of salinity and temperature on uptake of perfluorinated carboxylic acids (PFCAs) by hydroponically grown wheat (*Triticum aestivum L.*). Springer Plus 5:541.
- +Zhao Y, Tan YS, Haslam SZ, et al. 2010. Perfluorooctanoic acid effects on steroid hormone and growth factor levels mediate stimulation of peripubertal mammary gland development in C57B1/6 mice. Toxicol Sci 115(1):214-224.
- Zhao YG, Wan HT, Wong MH, et al. 2014. Partitioning behavior of perfluorinated compounds between sediment and biota in the Pearl River Delta of South China. Mar Pollut Bull 83(1):148-154. http://doi.org/10.1016/j.marpolbul.2014.03.060. http://www.ncbi.nlm.nih.gov/pubmed/24775068.
- +Zheng L, Dong GH, Jin YH, et al. 2009. Immunotoxic changes associated with a 7-day oral exposure to perfluorooctanesulfonate (PFOS) in adult male C57BL/6 mice. Arch Toxicol 83(7):679-689.
- Zhou Y, Hu LW, Qian ZM, et al. 2016. Association of perfluoroalkyl substances exposure with reproductive hormone levels in adolescents: By sex status. Environ Int 94:189-195. http://doi.org/10.1016/j.envint.2016.05.018.
- Zhou Y, Hu LW, Qian ZM, et al. 2017. Interaction effects of polyfluoroalkyl substances and sex steroid hormones on asthma among children. Scientific Reports 7(1):899. http://doi.org/10.1038/s41598-017-01140-5.
- Zhu Y, Qin XD, Zeng XW, et al. 2016. Associations of serum perfluoroalkyl acid levels with T-helper cell-specific cytokines in children: By gender and asthma status. Sci Total Environ 559:166-173. 10.1016/j.scitotenv.2016.03.187.