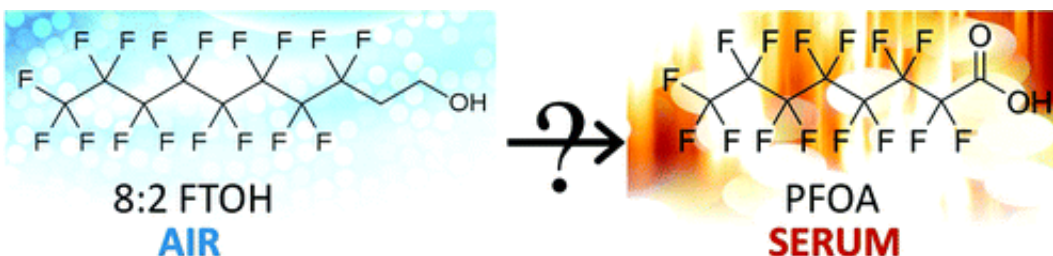


First link between potentially toxic PFCs in office air and in office workers' blood

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In a first-of-its-kind study, scientists are reporting that the indoor air in offices is an important source of worker exposure to potentially toxic substances released by carpeting, furniture, paint and other items. Their report, which documents a link between levels of these so-called polyfluorinated compounds (PFCs) in office air and in the blood of workers, appears in ACS' journal *Environmental Science & Technology*.

Michael McClean and colleagues explain that PFCs, used in water-repellent coatings on carpet and [furniture](#), may have adverse effects on human health. The substances are widespread in the environment and in humans around the world. Scientists know that potential sources of exposure include food, water, indoor air, indoor dust and direct contact with PFC-containing objects. But the link between levels in air and blood had not been explored previously, so McClean's group set out to fill that gap with a study of 31 office workers in Boston.

They found concentrations of a PFC called fluorotelomer alcohol (FTOH) in office air that were 3-5 times higher than those reported in previous studies of household air, "suggesting that offices may represent a unique and important exposure environment." In addition, the study found a strong link between concentrations of FTOH in office air and perfluorooctanoic acid (a metabolite of FTOH) in the blood of office workers. The results also suggested that workers in newly renovated office buildings may receive considerably higher doses of PFCs than workers in older buildings.

More information: Polyfluorinated Compounds in Serum Linked to Indoor Air in Office Environments, *Environ. Sci. Technol.*, 2012, 46 (2), pp 1209–1215. [DOI: 10.1021/es2038257](https://doi.org/10.1021/es2038257)

Abstract

We aimed to investigate the role of indoor office air on exposure to polyfluorinated compounds (PFCs) among office workers. Week-long, active air sampling was conducted during the winter of 2009 in 31 offices in Boston, MA. Air samples were analyzed for fluorotelomer alcohols (FTOHs), sulfonamides (FOSAs), and sulfonamidoethanols (FOSEs). Serum was collected from each participant ($n = 31$) and analyzed for 12 PFCs including PFOA and PFOS. In air, FTOHs were present in the highest concentrations, particularly 8:2-FTOH (GM = 9920 pg/m³). FTOHs varied significantly by building with the highest levels observed in a newly constructed building. PFOA in serum was significantly correlated with air levels of 6:2-FTOH ($r = 0.43$), 8:2-FTOH ($r = 0.60$), and 10:2-FTOH ($r = 0.62$). Collectively, FTOHs in air significantly predicted PFOA in serum (p

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