THYROID GLAND

Organic pollutant levels in blood associated with thyroid disease

New research by UK scientists shows that serum levels of perfluorooctanoic acid (PFOA or 'C8') and perfluorooctane sulfonate (PFOS) are associated with thyroid disease. "We have found that people with higher blood levels of PFOA/S have higher rates of thyroid disease," says investigator Tamara Galloway (University of Exeter, UK).

PFOA and PFOS are synthetic compounds commonly used in the manufacture of nonstick surfaces. "PFOA and PFOS are detectable in virtually everyone in society across global populations," adds Galloway.

The researchers analyzed data from the US National Health and Nutrition Examination Survey to explore the effects of serum concentrations of PFOA and PFOS in a representative sample of the US general adult population. Their analysis adjusted for factors such as age, sex and ethnicity and included 3,966 adults whose blood serum was sampled between 1999 and 2006. They found that individuals with higher levels of PFOA (≥5.7 ng/ml) were twice as likely to report current treatment for thyroid disease than those with lower levels of PFOA (≤4 ng/ml). The investigators also found a significant association between serum levels of PFOS and thyroid disease in men.

"Studies to clarify the mechanisms of these associations are urgently needed," concludes Galloway. "There is a large study underway in the USA, called the C8 study, of over 60,000 people exposed to much higher levels of PFOA than are present in the general population. It will be interesting to see how these results compare to […] the study here."

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Original article Melzer, D. *et al.* Association between serum perfluorooctanoic acid (PFOA) and thyroid disease in the NHANES study. *Environ. Health Perspect.* doi:10.1289/ehp.0901584