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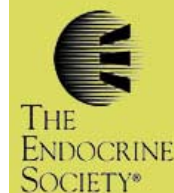
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Implications of Early Menopause in Women Exposed to Perfluorocarbons

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Context: Perfluorocarbons (PFC) are man-made chemicals used in numerous household products. They have a long half-life in humans and complex animal toxicity, and accumulating evidence points toward associations with multiple human health endpoints.

Objective: Our objective was to investigate whether PFC are associated with endocrine disruption in women.

Design: Cross-sectional analyses were made between quintiles of serum PFC, serum estradiol, and menopause onset.

Setting: The C8 Health Project, with cohort of 69,030 adults and children, was conducted due to PFC contamination of drinking water from six water districts in two states.

Participants: Participants included 25,957 women aged 18–65 yr.

Main Outcome Measures: Serum estradiol levels and onset of menopause were assessed. The survey was the result of a class action suit, and survey designers (an independent corporation) had no *a priori* hypotheses. All hypotheses have been formulated by other investigators after data collection.

Results: After excluding women who reported hysterectomy and adjusting for age within the group, smoking, alcohol consumption, body mass index, and exercise, the odds of having experienced menopause were significantly higher in the highest quintile relative to the lowest quintile of perfluorooctanoate (PFOA) and perfluorooctane sulfonate (PFOS) in the perimenopausal [PFOS odds = 1.4, confidence interval (CI) = 1.1–1.8; PFOA odds = 1.4, CI = 1.1–1.8] and menopausal age groups (PFOS odds = 2.1, CI = 1.6–2.8; PFOA odds = 1.7, CI = 1.3–2.3). After appropriate exclusions and adjustment for covariates, there was a significant inverse association between PFOS and estradiol in perimenopausal ($\beta = -3.65$; $P < 0.0001$) and menopausal age groups ($\beta = -0.83$; $P = 0.007$) but not between PFOA and estradiol.

Conclusions: These data suggest that PFC are associated with endocrine disruption in women and that further research on mechanisms is warranted.

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Exposure to environmental chemicals could trigger early menopause in women, according to the results of a new study.

Higher levels of perfluorocarbons (PFCs) in the body are linked to menopause in women between the ages of 42 and 64.

PFCs are contained in many household products, including furniture, paints, carpets, food containers and clothing.

Sarah Knox, of the West Virginia University School of Medicine, said that this was the largest study ever study investigating the effects of PFCs on women.

"Our data shows that after controlling for age, women of perimenopausal and menopausal age in this large population are more likely to have experienced menopause if they have higher serum concentrations of PFCs than their counterparts with lower levels."

According to NHS Choices, the average age for a British women to reach the menopause is 52. If menopause starts before the age of 45, it is classed as premature - a condition which affects one per cent of those under the age of 40 and 0.1 per cent under the age of 30.

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Exposure To Chemicals In Environment Associated With Onset Of Early Menopause

Posted by [News Report](#) in Wednesday, March 23rd 2011

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PFCs are man-made chemicals used in a variety of household products including food containers, clothing, furniture, carpets and paints. These include a family of substances that keeps food from sticking to pots and pans, repels stains on furniture and rugs, and makes the rain roll off raincoats. Industry makes use of the slippery, heat-stable properties of these same chemicals to manufacture everything from computers to cosmetics and household cleaners. Their broad use has resulted in widespread dissemination in water, air, soil, plant life, animals and humans, even in remote parts of the world. A probability sample of U.S. adults, found measurable concentrations of PFCs in 98 percent of the participants tested.

"The current study is the largest ever to be done on the endocrine-disrupting effects of perfluorocarbons in human women," said Sarah Knox, PhD, of the West Virginia University School of Medicine in Morgantown and lead author of the study. "Our data shows that after controlling for age, women of perimenopausal and menopausal age in this large population are more likely to have experienced menopause if they have higher serum concentrations of PFCs than their counterparts with lower levels."

In this study of 25,957 women aged 18 to 65 years, researchers ascertained menopausal status of participants and then measured their serum concentration levels of PFCs and estradiol. They found that there was an association between PFC exposure, decreased estradiol and early menopause in women over age 42. There was also an inverse association between PFC levels and estradiol in women of child bearing age but this association was not statistically significant.

"There is no doubt that there is an association between exposure to PFCs and onset of menopause, but the causality is unclear," said Knox. "Part of the explanation could be that women in these age groups have higher PFC levels because they are no longer losing PFCs with menstrual blood anymore, but, it is still clinically disturbing because it would imply that increased PFC exposure is the natural result of menopause."

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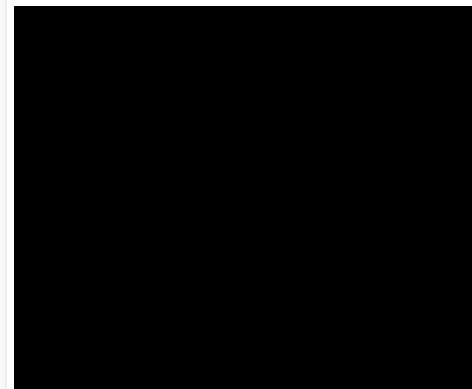
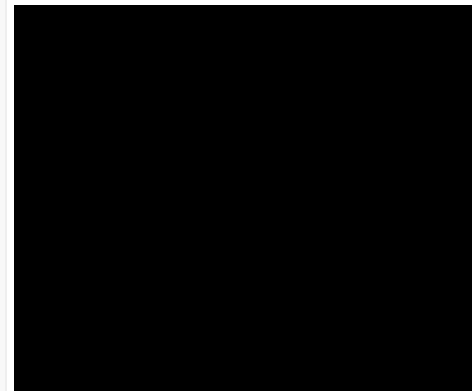
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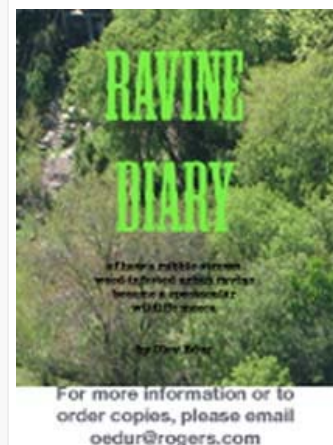
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Exposure to chemicals in environment associated with onset of early menopause

Published: Wednesday, March 23, 2011 - 07:34

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Source: [The Endocrine Society](#)

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Household chemicals bring early menopause for some

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Environmental Chemical Exposure Associated With Early Onset Menopause

23 Mar 2011 [Click to Print](#)

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Source:
Aaron Lohr
The Endocrine Society

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Exposure To Chemicals In Environment Associated With Onset Of Early Menopause Exposure To Perfluorocarbons Associated With Lower Concentrations Of The Hormone Estradiol

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Exposure to Chemicals in Environment Associated with Onset of Early Menopause

Released: 3/23/2011 7:00 AM EDT

Source: Endocrine Society

Exposure to perfluorocarbons associated with lower concentrations of the hormone estradiol

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Keywords:

Endocrine Disrupting Chemicals, perfluorocarbons, early menopause, Estradiol, Menopause

Contact Information

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Description

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