Medical Xpress

PCB increases harmful effects of smoking

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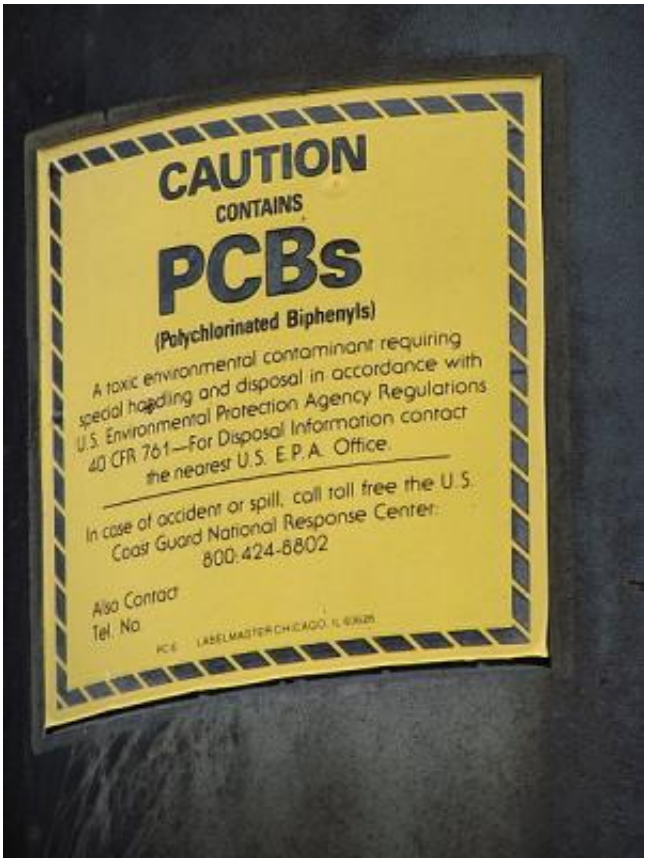

PCB warning label affixed to a railroad signal power supply transformer dating from the 1930's at CP-SLOPE interlocking, west of Altoona, PA on the Norfolk Southern Pittsburgh Line. Credit: Sturmovik/Wikipedia

It is well known that exposure to asbestos or radon drastically increases the injurious effects of smoking. In the present study, led by Uppsala University, the scientists have investigated whether high blood levels of

the environmental contaminant PCB (polychlorinated biphenyls) reinforces the harmful effect of smoking.

The study was performed within the framework of the so-called PIVUS study, which comprehends some 1,000 70-year-old men and women in Uppsala. The results show that the risk of having died at the 8-year follow-up was 40 per cent higher for smokers with low levels of PCB in their blood compared with non-smokers. For smokers with high levels of PCB, the risk was fully 640 per cent higher.

Also in former smokers the risk of dying was considerably higher among those who had high levels of PCB in their blood compared with those who had low levels (370 per cent greater risk, compared with 20 per cent). On the other hand, no elevated mortality was found among those who had never smoked.

"These data show that exposure to PCB increases the risk dramatically in both smokers and former smokers. For non-smokers, no elevated risk was found, at any rate not after eight years. More studies are needed to clarify the risks for this group," says Lars Lind, professor of cardiovascular epidemiology at the Department of Medical Sciences, Uppsala University.

PCBs (Polychlorinated biphenyls) are a group of environmental contaminants that were banned nearly 20 years ago. But since they accumulate in the food chain and remain in the human body for a very long time, high levels can still be found in a majority of the population in Sweden and most other industrialised countries. High levels of PCBs have previously been shown to be linked to poor heart function, and for a number of risk factors for heart problems, such as obesity, diabetes and high blood pressure.

More information: Duk-Hee Lee, Lars Lind, David R Jacobs, Samira

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Salihovic, Bert van Bavel, P. Monica Lind. Does mortality risk of cigarette smoking depend on serum concentrations of persistent organic pollutants? Prospective Investigation of the Vasculature in Uppsala Seniors (PIVUS) study. *PLOS ONE* May 2014.

Provided by Uppsala University

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