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Researchers identify environmental exposure to organochlorines may impact male reproduction

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Melissa Perry, Sc.D., M.H.S., professor and chair of the Department of Environmental and Occupational Health at the GW School of Public Health and Health Services and adjunct associate professor at the Harvard School of Public Health, led an observational study indicating that environmental exposure to organochlorine chemicals, including Polychlorinated Biphenyls (PCBs) and p,p'-DDE (the main metabolite of the insecticide DDT) can affect male reproduction. The research was published online on Dec. 21, 2011 in the journal *Environmental Health Perspectives*.

The researchers studied 192 men who were part of couples that were sub-fertile, to see if the men with higher levels of organochlorines in their blood showed evidence of increased rates of sperm abnormalities. They looked for sperm disomy, which occurs when sperm cells have an abnormal number of chromosomes. While all men have a certain number of sperm with such abnormalities, researchers found that men with higher levels of DDE and PCBs had significantly higher rates of sperm abnormalities.

"This research adds to the already existing body of evidence suggesting that environmental exposure to certain chemicals can affect male fertility and reproduction. We need to further understand the mechanisms through which these chemicals impact sperm," said Dr. Perry. "While we cannot avoid chemicals that already persist in the

environment, it is imperative that decisions about putting biologically active chemicals into the environment need to be made very carefully, because there can be unanticipated consequences down the road."

The researchers used a new sperm imaging methodology developed by Dr. Perry and colleagues to detect the chromosomal abnormalities, which allowed them to study a larger sampling of individuals than previous studies.

More information: To view the 'Ahead of Print' version of this research paper on the Environmental Health Perspectives Web site, visit: ehp03.niehs.nih.gov/article/fe … tion?articleURI=info%3Adoi%2F10.1289%2Fehp.1104017

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