

# Teenage exposure to pesticides may lead to abnormal sperm, new study says

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Adolescent exposure to environmental pollutants known as organochlorines may lead to defective sperm, according to a study published today by researchers at Milken Institute School of Public Health (Milken Institute SPH) at the George Washington University and co-authors. The research is the first to look for associations between exposure to these chemicals in the teenage years and abnormalities in sperm that are associated with fertility problems later in life.

"We need more research to find out how these organochlorine pollutants may be affecting the maturation of the testicles and their function," says lead author Melissa Perry, ScD, MHS, professor and chair of the Department of Environmental and Occupational Health at Milken Institute SPH. "Exposure to these chemicals in adolescence may lead to reproductive problems years later."

Perry led a team that studied [sperm](#) and [blood samples](#) taken from 90 men who lived in The Faroe Islands, an island community in the North Atlantic. The island's population consumes a seafood-rich diet, including pilot whale meat and blubber, which leads to higher-than-average exposures to organochlorine pollutants including polychlorinated biphenyls or PCBs and the main metabolite of the insecticide DDT. Blood samples taken at age 14 were available for 33 of the men included in the study.

In addition to measuring the amount of organochlorine pesticides in the blood samples, the team used a sperm imaging method devised by

Perry's lab to detect sperm disomy, a condition in which sperm cells have an abnormal number of chromosomes. The team found that men with higher levels of the DDT metabolite and PCBs, both as adults and at age 14, had significantly higher rates of sperm disomy. The results fit with an earlier study that Perry led investigating U.S. men who were part of a couple seeking help for infertility. That study found that those with higher levels of organochlorine chemicals in their blood showed the same kind of sperm abnormalities.

Organochlorine pesticides such as DDT were used extensively through the 1960s and are now banned in the United States. However, they are still used in some tropical countries and even in places that don't use them anymore these chemicals still linger in the soil and water. People in the United States can be exposed to these pollutants by eating a diet with lots of meat, dairy and fatty fish.

Perry says that additional investigation must be done to solidify the findings from this study and others. Until then, consumers can take steps to limit their exposure to these pesticides, which have also been linked to other kinds of health problems.

"Most people can reduce their exposure to PCBs and DDT by cutting back on foods that are high in animal fats and choosing fish wisely," Perry says.

At the same time, she says that the research findings also raise important issues for policymakers who regulate the use of pesticides and other potentially harmful chemicals. "This study, and others like it, suggest that any decisions about putting biologically active chemicals into the environment must be made very carefully as there can be unanticipated consequences down the road."

Provided by George Washington University

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