

Exposure To Pesticides In Food, Water Ups Diabetes Risk

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GRANADA, Spain—A person's exposure to pesticides in food, air and water has a direct relationship with the prevalence of type 2 diabetes in adults, regardless of age, gender and body mass index, according to a new study published in the journal *Environmental Research*.

The findings suggest substances (persistent organic pollutants or COPs) found in pesticides tend to concentrate in body fat, and may be one of the reasons why obese people are more likely to develop diabetes, since the more fat the higher the COP concentrations in the body.

Researchers at the University of Granada found people with higher concentrations of DDE—the main metabolite in the pesticide DDT—are four times more likely to develop type 2 diabetes than other people. The risk of type 2 diabetes also is associated with exposure to β -HCH (beta-Hexachlorocyclohexane), which is present in the formula of the pesticide Lindano.

Researchers analyzed the concentrations of a specific group of COPs in the adipose tissue of 386 adult subjects assisted at two hospitals in Spain. They said human adipose tissue acts as an energy reservoir and has an important metabolic function; however, it can store potentially harmful substances, such as COPs. This makes COPs concentrations a useful marker of a subject's exposure to COPs, which are a group of chemicals with diverse characteristics that are present in pesticides, industrial waste and building materials. The compounds penetrate the body mainly through food, but also through air or the skin.

"The mechanism of action by which COPs increase the risk of diabetes is still unknown. However, some researchers have suggested that COPs might cause an immunological response when they penetrate estrogen receptors in tissues associated with the metabolism of sugars," the researchers said.