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Environmental pollution and diabetes may be linked

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Cambridge scientists are advocating additional research into the little understood links between environmental pollution and type 2 diabetes.

In the most recent edition of the Lancet, Drs. Oliver Jones and Julian Griffin highlight the need to research the possible link between persistent organic pollutants (POPs, a group which includes many pesticides) and insulin resistance, which can lead to adult onset diabetes.

In their commentary, Dr Jones and Dr. Griffin cite peer reviewed research including that of Dr D Lee, et al, which demonstrated a very strong relationship between the levels of POPs in blood, particularly organochlorine compounds, and the risk of type 2 diabetes.

“Of course correlation does not automatically imply causation,” says Dr. Jones. “But if there is indeed a link, the health implications could be tremendous. At present there is very limited information. Research into adult onset diabetes currently focuses on genetics and obesity; there has been almost no consideration for the possible influence of environmental factors such as pollution.”

Interestingly, in the Lee study an association between obesity and diabetes was absent in people with low concentrations of POPs in their blood. In other words, individuals were more at risk of diabetes if they were thin with high levels of POPs in their blood than if they were overweight but with low levels of POPs.

Dr Jones said: “I think research should be carried out to first test the hypothesis that POPs exposure can cause diabetes, perhaps using cell or tissue cultures, so we know for sure if this can occur. Assuming POPs can have this effect, the next step would be to try and develop a method of treatment for those people who might be affected.”

POPs came into prominence as effective pesticides with the introduction of DDT in the 1940s. However, many of these chemicals, including DDT, fell out of favour after they were blamed for the declining number of wild birds and other animals (brought to the public's attention in Rachel Carson's Silent Spring) and the possible negative human health effects. As the compounds biodegrade slowly, they continue to find their way into the food chain and ultimately into the blood streams of individuals even though many of these toxins were banned many years ago. Additionally, these compounds can persist in body fat for very long periods of time following exposure.

Source: University of Cambridge

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