

Effect of Pesticide Exposure on Diabetes

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Received: June 28, 2019; Published: December 27, 2019

Pesticides are widely used to control pests such as ticks and mites, disease carriers such as rats and mice, weeds and insects in agricultural fields, houses, gardens, lawns and offices. Pesticides exposure may be short term and long term. Short term exposure cause headaches, nausea, while long term exposure may cause cancer and diabetes. Worldwide diabetes is an very important health problem in both adults and children. The causal factors were lifestyle, alcohol consumption, obesity, sleeping patterns, genetic factors, smoking and some pesticides such as aldrin, heptachlor, cyanazine, chlordane [1-5].

There are three major types of insecticides which have been identified as diabetogenic. These are:

1. Organochlorine insecticide
2. Carbamate insecticide
3. Organophosphate insecticide

Insecticides increases the process of gluconeogenesis, stimulate oxidative stress and inhibit the activity of acetylcholinesterase. All these activities of the insecticides promote diabetes. Organophosphate insecticides are widely used insecticide in the world. It reduces the secretion of insulin from pancreas and induce the fasting hyperglycaemia, which causes diabetes. DDE an organochlorine insecticide is the breakdown product of DDT also increase the risk of diabetes. Carbamate insecticides alter the normal function of endocrine glands as well as various metabolic reactions such as, protein, lipid and carbohydrate metabolism in the body. If it alter the carbohydrate metabolism than it may impair glucose regulation and increases the risk of diabetes [6-8].

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Volume 4 Issue 1 January 2020

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