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Science | By Kennard Wilson

**Chemical Exposure Today, Behavioral**

# Chemical Exposure Today, Behavioral Changes Generations Later!

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Scientists at The University of Texas and Washington State University have come up with an interesting observation. They have found an improved response to stresses in those animals whose forefathers were exposed to some environmental factors generations ago. The observation may prove pivotal in the studies relating to heredity of behavioral elements. Maybe this may lead to settle the long standing debate over the genetics vs. environment on individual's behavior.

The researchers exposed rats during their gestation period to vinclozolin and compared the responses to stress in the third generation offspring with those whose ancestors were not exposed to the chemical. The chemical is a fungicide popularly used in fruits and vegetables. This is known to affect hormonal functions even generations later. Scientists, including David Crews of the University of Texas, Michael Skinner of Washington State University and their colleagues found that the descendants of those exposed to the chemical were more sensitive to stress conditions. They performed a number of behavioral tests and noted that the regions of brain related to stress were more active in the offspring than their unexposed counterparts.

The scientists made their experiment on the third generation for a unique reason. They say this is the third human generation since the chemical

revolution and they wanted to replicate it in the animal model of the conditions.

But they are of the view now that the ancestral exposure of man's forefathers alerts the brain development to condition it to respond to stresses differently. It is surprising but true. This study on the impacts of vinclozolin is different from the impact of the chemical on turning off the genes. Their epigenetic effect has already been shown to affect their selection of mates.

The present study is more reliable for its dependence on the study of molecular changes in the brain and other physiological changes. The study may prove historical as it may expand its ambit to include even issues like obesity. The scientists tend to see these problems like autism and bipolar functional disorders in historical perspective.

The latter half of the last century has shown increase in a number of health conditions and this has been the time when certain chemicals have been used in agriculture at large scale to induce green revolutions and the like. While such chemical revolutions have been helpful to address the increasing demands of food grains and other edibles for the increased global population, this might have had its side effects on the humanity.

The animal model of the real human conditions may lead to newer insights into the game. And once it is confirmed that exposure to chemicals can affect generations together, it may help solving the global health problems that have been haunting physicians for decades. This may hopefully open the avenues to solve the mystery of many such diseases and syndromes that are usually understood to be linked with modern life styles.

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