THE IMPACT OF BISPHENOL-A ON NEURONES

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The aim of the article is to present analyses concerning Bisphenol-A. A chemical commonly found in plastics may interfere with neurones in developing embryos. Some scientists question whether or not the new findings are relevant to humans. Quantitative and quantitative methods have been used in the article.

The results of the investigation have shown that in the past, Bisphenol-A was shown to epigenetically affect the developing nervous system, but how this happens is not clear. The new study, led by Dr Michele Yeo from Duke University, found it affected gene expression and disrupted the chemical balance of neurones. Bisphenol-A can disrupt gene expression through epigenetic mechanisms.

For example, the researchers directly exposed cultured rat, mouse and human cells to Bisphenol A. They then examined extracted cells from female mice fed on a diet of the chemical. They have relevance for identifying unique neurodevelopmental toxicity of Bisphenol-A, which could possibly play a role in the pathogenisis of human neurodevelopmental disorders.

As the result of the investigation it can be surely said that many scientists such as Dr Ian Musgrave, Phd Andrew Bartholomaeus from the University of Adelaide, the University of Canberra have proved that while the study throws light on aspects of gene regulation, it is not relevant to human exposure of the chemical. The concentrations in this study are hundreds to thousands of times higher than humans would be exposed to through the maximal permissible level of Bisphenol-A in food.

For, example, the actual brain cells were treated in culture in a very non-physiological environment - so “they were actually taken out of the animal and bathed in a solution which actually had the Bisphenol-A in it,” says Bartholomaeus who has worked in risk assessment for Food Standards Australia New Zealand, which monitors levels of Bisphenol-A in food containers.

So, the results of the investigation have proved that Bisphenol-A consumed in food or drink is metabolised before it enters the bloodstream. In terms of human risk assessment it has fairly low relevance.