

Improving your diet may not help you beat stress

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Research published online today in the Journal of Proteome Research, shows how improving the diet of rats placed in stressful environments did not normalise their metabolic profile, an indicator of their health.

The team from Imperial College London and the Nestle Research Centre divided 36 rats into groups of six. Groups A to D were fed a standard diet, while groups E and F were fed a diet enriched with long chain polyunsaturated acids (LC-PUFA) which are normally found in milk and dairy products.

The rats were subjected to different types of stress, one where they were separated from their mothers periodically during the first few weeks of life and a second stress at a later stage where they were placed on a platform suspended above water. Following the tests, samples of blood plasma were taken from the rats and analysed using NMR spectroscopy.

Group A was used as a control group and not subjected to any stress, while groups B, C, and D were subjected to either one or both stresses. Groups E and F were subjected to water avoidance or both maternal separation and water avoidance, as well as being fed the enriched diet.

They found the stress caused by maternal separation led to a decrease in lipoproteins and an increase in amino acids, glucose, lactate, creatine and citrate. The stress caused by the water avoidance resulted in increased levels of O-acetyl glycoproteins.

Giving the rats the LC-PUFA enriched diet did help to improve their metabolic profiles, an indicator of health, although the diet failed to totally normalise them.

Dr Elaine Holmes, from Imperial College London, who led the research said: "Although the study shows this particular dietary intervention did not work to significantly improve health, the importance of a good diet in remaining healthy should not be underestimated."

"However this work could have important implications for the development of other dietary interventions. The research shows it is possible to accurately measure and quantify how changing diet impacts health. This could ultimately lead to the development of more targeted and more effective products."

Source: Imperial College London

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