Team discovers potential blood test for autistic patients

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(Medical Xpress)—Results of a recent clinical study by researchers from Western and the University of Arkansas reveal the presence of a unique blood marker, which may further the understanding of possible gut linked environmental contributors to autism. The findings may also forecast potential blood tests for early screening to identify and potentially treat the condition, even before symptoms present.

The discovery, made by Dr. Derrick MacFabe of Western and Drs. Richard Frye and Stepan Melynk of Arkansas Children's Hospital Research Institute in Little Rock, Ark., found evidence of abnormal energy metabolism in a large subgroup of autistic children, which was consistent with previous biological breakthroughs made by MacFabe and his team over the past decade, further proving that these metabolic abnormalities may arise, not only from genetic factors, but from compounds produced by certain types of bacterial species often found to be increased in the gut of persons with autism.

The paper, "Unique acyl-carnitine profiles are potential biomarkers of acquired mitochondrial disease in autism spectrum disorders," was recently published in the prestigious peer-reviewed open-access journal *Translational Psychiatry*.

Recent evidence suggests that biological abnormalities in many persons with autism spectrum disorders (ASD) are not restricted to the brain but can involve other body systems including the immune, energy generation, detoxification and digestive systems. These abnormalities

may be due to impaired function of mitochondria, the energy producers of cells. ASD is a family of developmental conditions of impaired language and social development, as well as repetitive behaviors and restricted interests.

"Autism spectrum disorders affect up to one in 88 individuals," MacFabe said. "And the number appears to be increasing. Many have digestive and metabolic issues, but how they may relate to ASD behaviours and the increase of occurrence were unclear."

In this study of 213 children, the research team found 17 per cent of children with ASD had a unique pattern of blood markers of fat metabolism, called acyl-carnitines, as well as other evidence of abnormal cellular energy function, like reduced glutathione.

"This study suggests that autism in some patients can arise from alterations in mitochondrial function and fat metabolism following environmental exposure to propionic acid produced from ASD associated gut bacteria," MacFabe said.

More information: www.nature.com/tp/journal/v3/n …/abs/tp2012143a.html

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